

Los Alamos National Laboratory

Business Operations Division

Organizational Overview

Basic Organizational Description: Los Alamos National Laboratory (LANL) is owned by the US Department of Energy (DOE) and operated under contract by the University of California (UC). Established in 1943 as part of the Manhattan Project, LANL's original mission was to design, develop, and test nuclear weapons. As technologies, US priorities, and the world community have changed, LANL's mission has broadened to enhancing global security by ensuring safety and confidence in the U.S. nuclear weapons stockpile, developing technical solutions to reduce the threat of weapons of mass destruction, and improving the environmental and nuclear materials legacy of the Cold War. In addition, LANL applies its scientific and engineering capabilities to assist the nation in addressing energy, environment, infrastructure, and biological security problems.

LANL is composed of 28 divisions, including the Business Operations (BUS) Division.

Each

division has a director, optional deputy director, group leaders, and team leaders.

BUS Division is organized into groups managed by group leaders (see Figure 0-1).

Each group is subdivided into teams based on the products and services it provides.

Generally, the group leaders give guidance to the team leaders regarding what actions or objectives must be accomplished. It is then up to each team and individual to use good judgment and creativity to determine the most effective way to get the work done.

BUS Division provides financial management, property, and procurement products and services to LANL. BUS enables LANL to achieve its mission by providing products and services through these three key business processes:

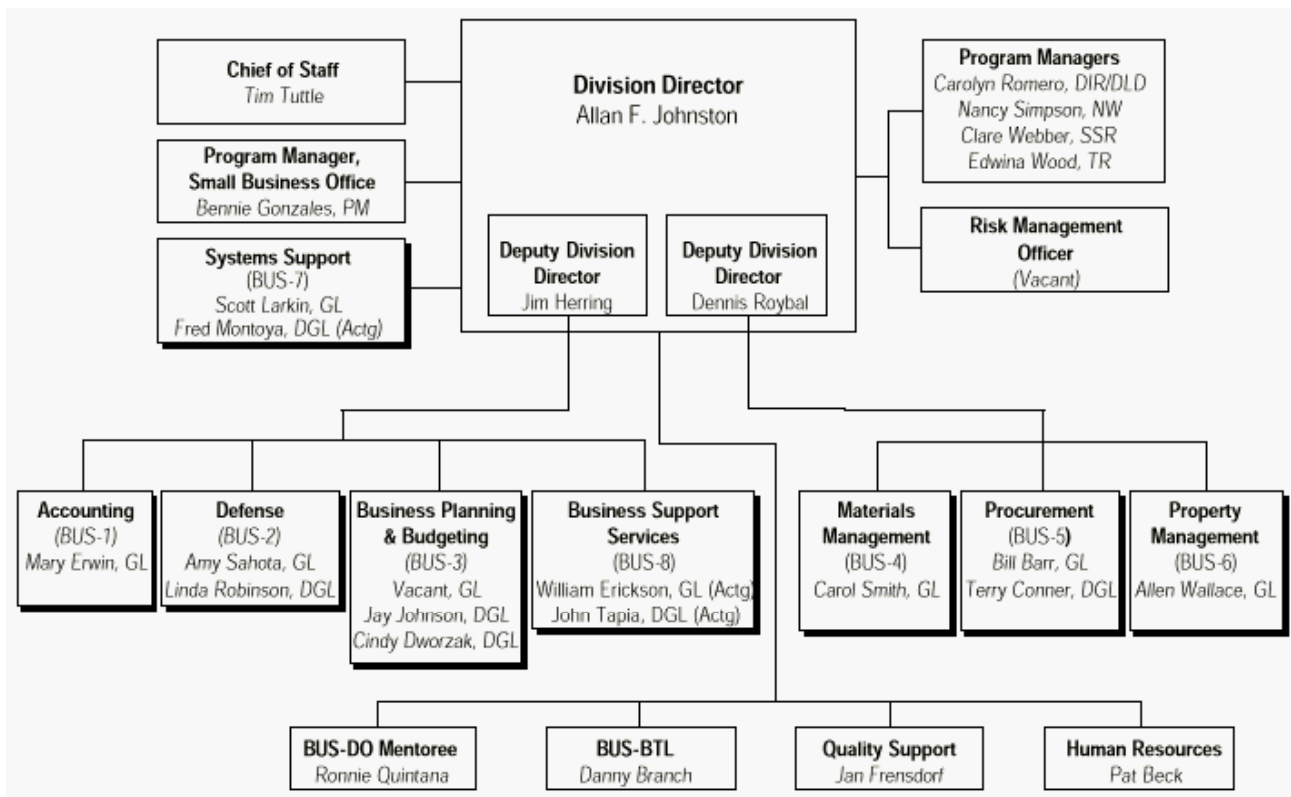


Figure 0-1. BUS Division organizational chart.

- Financial Management—Provide financial, accounting, and budgeting products and services that enable LANL managers to make effective financial decisions.
- Procurement—Provide acquisition and contractual services that enable LANL managers to make needed procurements in the most cost-effective manner. Provide transportation, receiving, and distribution services.
- Property Management—Provide cradle-to-grave management of physical resources.

Eight BUS groups, four BUS support teams, and the division office make up BUS Division. BUS-1, -2, -3, and -8 contribute to the key process of financial management. BUS-4 provides materials management, and BUS-5 is responsible for procurement.

Together these two groups combine to provide the entire procurement process. BUS-6 is responsible for the property management process. BUS-7 (Information Management), the Quality Support Office (QSO), and Human Resources provide key support processes.

Overall LANL funding for FY99 was \$1.45 billion. The FY99 budget for BUS Division was \$38.95 million, or slightly less than 3% of LANL's total funding.

BUS Division delivers products and services in two ways: centralized or "core" support and decentralized or "field" support using the distributed team model. Establishing distributed business teams means co-locating BUS employees with technical customers, a process that enhances and strengthens BUS Division's relationships with customers and enables BUS to better respond to and anticipate customer needs. A significant

portion of BUS Division staff provide decentralized support.

BUS Division's mission of customer-focused business services (see Figure 0-2) supports LANL's mission by continually improving, managing, and evaluating the financial, property, and procurement processes to ensure support of research and development technologies now and in the future. BUS Division's organizational culture also includes a

Los Alamos National Laboratory Mission
<i>Reduce the global nuclear danger</i>
BUS Division Mission
<i>Provide customer-focused business services</i>

Figure 0-2. The BUS mission supports LANL's mission.

clearly articulated vision (see Figure 0-3). Building on LANL goals, the division has also established a set of values and related BUS Division goals (see Figure 0-4.) Mission, vision, values, and goals all include a focus on customers, efficient operations, and a safe work environment.

BUS Division's major market is the technical programs and support divisions within LANL. Because BUS operations are viewed primarily as internal LANL support services, the primary customer requirement is process efficiency. Environmental expectations focus on worker safety and process efficiency.

In FY99 LANL employed approximately 7,400 workers. BUS Division employed 678

BUS Division Vision
Business Operations Division is widely recognized as an innovative and creative workforce, achieving a level of impact and performance that creates a clear, competitive advantage for the Laboratory.

Figure 0-3. The BUS Division vision.

LANL Goals	BUS Values	BUS Goals
1. Safety First!	• Safe Work Environment	1. Safety
2. Productivity and Strategic Business Development	• Customers • Efficient processes • Productivity • Teaming/synergy	3. Customer satisfaction and productivity 5. Internal integration
3. Embrace Diversity	• Respect • Innovation	2. People
4. Corporate Citizenship	• Stakeholders	4. Corporate Citizenship

Figure 0-4. BUS goals align with LANL goals and derive from division values. workers, roughly 9% of the LANL workforce. Figure 0-5 shows overall BUS Division workforce composition and Figure 0-6 shows the distribution of the BUS workforce across key and support processes. The BUS Division workforce is composed of 61% female employees and 39% male. Educational levels are

- 39% no college,
- 5% associate degrees,
- 32% bachelors degrees, and
- 24% masters degrees.

The majority of BUS Division employees are located in administrative office structures, with a large percentage working in the Otowi Building, a large office building in LANL's main technical area. Approximately 120 employees—members of BUS-4 who are responsible for receiving, distribution, mail,

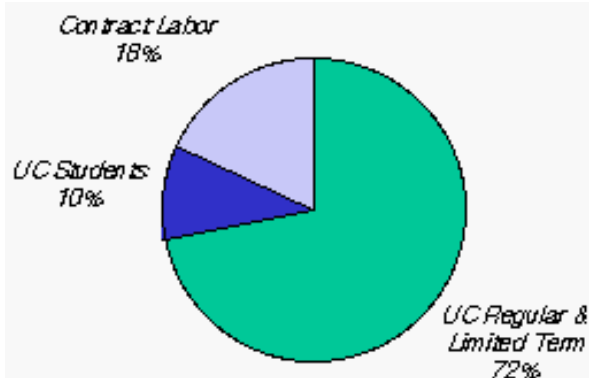


Figure 0-5. BUS Division workforce composition.

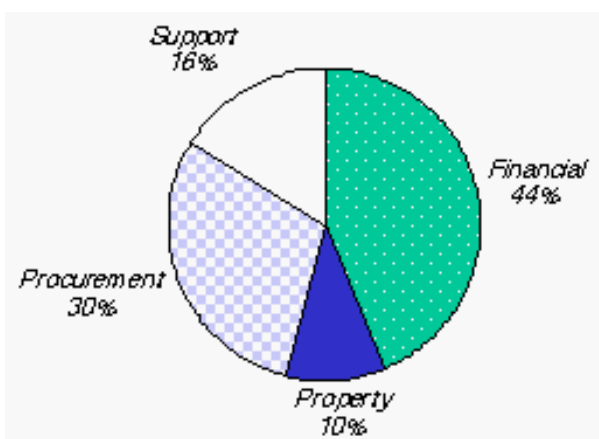


Figure 0-6. Distribution of BUS workforce across processes.

customer service, packaging and transportation, and other support services—are housed in a nearby warehouse facility. The staff providing distributed services are housed in facilities scattered across LANL's forty-three square miles of property.

BUS Division is committed to using automation in supporting improvements to business processes and communication technology. The division's long-term goal is to minimize reliance on paper and to optimize use of electronic documents and web-based interfaces.

Federal regulatory agencies with environmental oversight for various LANL

operations include EPA, DOE, OSHA and the NRC. The New Mexico Environment Department also oversees and regulates LANL activities. Because most BUS Division employees work in a typical administrative office environment, in day-to-day operations OSHA requirements related to employee safety and health are most applicable to BUS Division. Both DOE and federal Department of Transportation (DOT) regulations apply to driver and packaging and transportation activities in BUS-4. BUS-4 employs approximately twenty drivers. Nearly one-fourth of those drivers have commercial driver's licenses Class A & B with hazmat endorsements. BUS Division must also comply with the Federal Acquisition Regulations and DOE Acquisition Regulations.

In addition to regulatory expectations, LANL operations—including BUS Division performance—are shaped and evaluated by contractual requirements negotiated by DOE, UC, and LANL. These requirements, revised annually, are contained in Appendix F of the operating contract and provide a broad range of specific goals, measures, and evaluation criteria. Appendix F serves as a key method of determining both customer expectations and organizational performance. Both DOE and UC evaluate BUS Division based on Appendix F measures that specifically address finance, property, and procurement. In addition, DOE and UC evaluate overall LANL performance—to which BUS Division contributes—on other environmental components of Appendix F. Item 3.1 provides a more comprehensive explanation of the Appendix F process.

Customer and Stakeholder Requirements: BUS Division has identified three broad groups of customers:

- BUS Division employees;

- LANL customers, including technical programs and support divisions within the Laboratory; and
- stakeholders such as DOE, UC, and the surrounding communities and pueblos.

Each group of customers has a specific set of environmental expectations for BUS Division, as Figure 0-7 shows. Because of the type of work performed by BUS Division, environmental expectations are limited. Those expectations do include a commitment to safe operations—especially ergonomics—and efforts to minimize sanitary waste generation and consumption of resources.

In addition to the measures included in Appendix F, BUS Division uses a variety of

Customer Segment	Key Environ. Requirements	Determined By
BUS Division Employees	<ul style="list-style-type: none"> • Provide a safe and healthy work environment • Help LANL meet key environmental goals 	<ul style="list-style-type: none"> • Appendix F • LANL Goals • Voice of the Employee (VOE) • OSHA
Customers (Technical Programs and Support Divisions within LANL)	<ul style="list-style-type: none"> • Use good business practices (cost effective, timely, productive) • Help LANL meet key environmental goals 	<ul style="list-style-type: none"> • Appendix F • LANL Goals
Stakeholders (DOE, UC, the General Public)	<ul style="list-style-type: none"> • Use good business practices (cost effective, timely, productive) • Help LANL meet key environmental goals 	<ul style="list-style-type: none"> • Appendix F • DOE Orders • OSHA Requirements

Figure 0-7. BUS Division key customer segments and requirements related to environment.

LANL institutional systems to structure division operations. LANL's Integrated Safety Management (ISM) Program, in its broadest

definition, serves as a basis for the institution's environmental management system (see Item 1.1). LANL's Performance Management System (see Item 5.1) helps leaders establish clear performance expectations for employees and ensure those expectations are aligned with organizational goals and values. LANL mechanisms such as the annual Employee Checkpoint Survey (see Item 3.1) and the Upward Appraisal Program (see Item 5.2) also allow BUS Division leaders to evaluate customer/stakeholder satisfaction with division performance.

BUS Division also uses two unique processes to establish customer requirements and expectations and to measure customer satisfaction—Voice of the Customer (VOC) and Voice of the Employee (VOE). In both processes, BUS managers conduct interviews with customers/employees to identify issues or areas of interest regarding BUS key processes and attributes. Themes from these interviews become questions in web-based surveys intended to validate key themes and collect importance/satisfaction perceptions from the customer segment. Analysis of survey results identifies the target groups' most important/ least satisfying issues, enabling BUS managers to understand and identify priorities and areas for improvement. Next, BUS leaders work together with representatives of the customer or employee base to develop an action plan to deal with the issues. This often results in the formation of continuous quality improvement (CQI) teams. Ultimately the identified issues and themes become input to BUS's strategic planning process.

Supplier and P2-Partnering Relationships: Over half of LANL's \$1.45 billion operating budget is for the acquisition of goods and services necessary for operations. BUS Division is responsible for the oversight of these major subcontracts. The division's key

suppliers are the approximately 40 vendors managed by the Just-In-Time (JIT) Program, which accounts for 71% of all procurement transactions annually, and the labor contract companies who provide nearly one-fifth of the BUS Division workforce.

BUS Division manages all supplier relationships under terms of the supplier contracts and as demonstrated in the supplier process. BUS Division recognizes that key suppliers' performance directly affects the division and, therefore, clearly communicates quality expectations and performance requirements. Division representatives meet frequently and regularly with supplier representatives to evaluate performance and provide systematic, detailed feedback. One performance measure in Appendix also measures BUS Division's ability to evaluate the overall performance of suppliers.

In many cases, these JIT product and labor contracts do not contain an environmental component. Where applicable, BUS procurement experts ensure that routine products, such as office supplies, conform to any applicable environmental provisions such as recycled content.

Competitive Situation: Within the LANL organization, there are no direct competitors who can perform the traditional business operations work functions. Other internal LANL units, however, are competitors for both programmatic funding and funding for specific projects. The LANL budgeting process relies on cost allocation based on a causal/beneficial relationship. However, certain types of costs such as the business operations function benefit many programs. Because charging these costs to all programs (i.e., several thousand) is not practical, LANL has chosen indirect cost allocation to identify costs that are caused by or benefit several

programs. Other similar functions—such as human resources, security, and records management—also require indirect allocations and thus seek money from the same budget pool. BUS Division is thus required to find ways to both justify operating expenses and improve operating processes to make maximum use of available funding.

Because both DOE and UC use the Appendix F measures to evaluate performance at all three research and development laboratories managed by UC—LANL, Lawrence Livermore National Laboratory (LLNL) and Lawrence Berkeley National Laboratory (LBNL)—the annual evaluations provide a means of comparing performance levels among the three institutions. Although not all Appendix F measures are applicable to all three laboratories, the side-by-side evaluation each year does provide interesting relative information. Thus, as evaluated by key customers through Appendix F, both LBNL and LLNL can be generally considered competitors.

Strategic Context: The BUS Division philosophy of customer-focused quality combined with continuous improvement serves as the foundation for business strategy. Three key components of the program are developing the annual BUS business plan, a Customer Satisfaction Management (CSM) model, and Deming's Plan-Do-Check-Act (PDCA) model for process improvement (see Item 6.2). Various measures of customer satisfaction and process efficiency indicate that the division has made significant progress in this regard.

BUS Division has begun focusing on several new environmental thrusts:

- recycling of unwanted mail through a process coordinated in BUS mail services;

- paper reduction through double-sided copying, use of recycled paper, and use of electronic documents;
- general recycling through increased emphasis on awareness programs;
- energy efficiency through awareness and improved equipment purchases.

Through a strategic cooperative venture with the LANL Environmental Stewardship Office (ESO), BUS Division has participated in a Green Zia pilot project to identify ways of reducing routine wastes in an administrative office environment. Interim results from this pilot project were presented at the 1999 DOE Pollution Prevention Conference.

1. Leadership

1.1 Organizational Leadership

The leadership system that supports environmental excellence in BUS Division begins with the director of LANL who, in 1998, issued a vision for LANL that included zero environmental incidents. Figure 1-1 shows the "six zeros" which constitute LANL's highest-level goals. A comprehensive, proactive, ethics-based system cascades down from these leadership goals.

The division director and two deputies, eight group leaders, and four deputy group leaders make up the senior leadership team, the BUS Division Council. The Council sustains effective leadership throughout the division by serving as champions on business plan teams, by ensuring their team leader and employee performance plans are aligned with business plan goals, and by cascading information from Council meetings to employees and to CQI teams. BUS Division managers guide the organization by advocating uncompromising safety from the warehouse to the offices, by promoting pollution prevention and resource conservation, by modeling corporate citizenship, and by recognizing and rewarding innovation and efficiencies in productivity.

BUS Division has been working to establish both processes and behaviors to achieve zero-waste goals. The system begins with a vision (refer to Figure 0-3) and goals that are articulated in a strategic plan for the organization. In addition to articulating a vision, senior management has identified the five

Zero Environmental Incidents

Zero Ethics Incidents

Zero People Mistreatment Incidents

Zero Security and Safeguards Violations

Figure 1-1. LANL's "six zeros" goals. specific division goals shown in Figure 0-4. The goal dealing with customer satisfaction and productivity includes a focus on minimizing waste and maximizing efficient use of resources. BUS Division managers recognize that waste is the result of inefficiency. Similarly, the goals focusing on safety and corporate citizenship broadly include concern and respect for the environment. To actively demonstrate managerial commitment to these goals, senior leaders have chartered a BUS Division Safety/Ergonomic Committee which reports to management and is charged with advising the division on employee safety and health issues.

An integrating framework that BUS Division and LANL overall use as an environmental management system is ISM. The broad definition of "safety" encompasses all aspects of environment, safety, and health—including pollution prevention and waste minimization (see Figure 1-2). The term "integrated" is used to indicate that the safety management system is a normal and natural element of the performance of work; safety isn't a workplace addition, it is how LANL does business. ISM supports LANL's goal "to accomplish its mission cost-effectively while striving for an injury-free workplace, minimizing waste streams and avoiding adverse impacts to the environment from its operations." ISM

Zero Injuries or Illness on the Job

Zero Injuries or Illness off the Job





Figure 1-2. LANL's five-step process for ISM.

implementation is a major emphasis at LANL, and senior leaders formally review progress toward full implementation on a quarterly basis. Each year BUS Division leaders develop a detailed ISM implementation plan for the division that ties directly to the overall LANL ISM plan. In the 1999 BUS ISM implementation plan, leaders pledged, among numerous other initiatives, to incorporate safety as the first meeting agenda item at all weekly staff meetings, all quarterly all-hands meetings, and all group/team meetings. They have also added safety as employees' first element in annual performance evaluations and development plans.

The ISM system includes Laboratory Performance Requirements (LPRs), internal requirements governing the performance of work that are drawn directly from legal or contractual regulations. LANL has grouped the LPRs into six categories, including worker health and safety and environmental protection. Laboratory Implementing Requirements (LIRs) stem directly from the LPRs and provide detailed mandatory implementing requirements for the safe and environmentally responsible performance of

work (see Figure 1-3). To ensure that all BUS division employees understand LPR/LIR guidelines and performance requirements, the division has created an online web page summarizing LIRs that pertain to performance of BUS activities. To further guide both managers and employees, the web site contains a responsibility table (see Figure 1-4) that specifically identifies the applicability of requirements to individual employees and BUS groups.

To ensure that all employees understand that environmental performance is a major organizational concern, senior leaders require each division employee to sign an "Employee Safety Commitment." This document, which is cosigned by the employee's supervisor, reinforces the focus on safety and on continuous improvement.

BUS Division's management system is based on frequent and open communication. Group leaders meet biweekly with the division management. These sessions focus on expectations and progress toward goals, as well as environmental, health, and safety

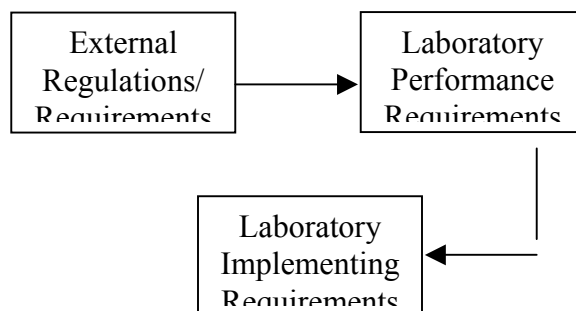


Figure 1-3. Translation of legal requirements into LANL performance standards.

issues. For example, ergonomics is a frequent topic at these meetings as is waste management. In addition, senior leaders review action plans for all projects, including process improvement efforts, to ensure work

is being completed as scheduled and budgeted or to determine necessary adjustments to the plans.

Senior leaders also conduct regular management walkarounds. These informal reviews allow leaders to observe working conditions throughout their areas of responsibility, to talk informally with employees, and to note potential areas for improvement. LANL has created nine categories of guidance cards, including environmental protection, that provide suggestions on the types of observations managers should make during walkarounds. In 1999, BUS managers performed 230 documented walkarounds.

BUS Division has appointed a Safety Officer whose duties are to coordinate division activities in this area and to bring relevant issues to the biweekly meetings of BUS managers. The division ESH Officer also makes presentations at all-hands meetings.

A division Safety/Ergonomic Committee, composed of employee representatives from across the division, is chartered to keep employees attentive to safety at all times. The committee's goal is to reduce and prevent future accidents/injuries/occurrences by implementing safety, health, environmental, and accident prevention policies, procedures, standards, and programs.

LIR # / OIC	LIR Title	Reviewed <small>Not Applicable</small>	Worker	Group Leader	Division Leader	Facility Manager	1	2	3	4	5	6	7	8
LIR201-00-04 / S-8	LANL Incident Reporting Process		X	X	X	X								
LIR220-01-01 / FE-6	Construction Project Management								X		X			
LIR220-03-01 / FE-6	Facility Engineering Manual	X												
LIR230-01-01 / FE-1	Laboratory Excess Space & Surplus Facility Requirements			X	X	X								

Figure 1-4. A sample of BUS Division's LIR responsibility table for LIR applicability.

Information regarding organizational goals and current progress cascades to individual employees through the management structure. In addition to the quarterly all-hands meetings already mentioned, group leaders hold regular meetings with their staff to discuss programmatic issues. BUS Division also maintains a web site with a wide range of detailed available information for employees, customers, and stakeholders. One key part of the web site includes safety resources (see Fig. 1-5). Each BUS group also maintains a safety bulletin board, with a new display each month.

BUS Division is fully committed to continuous improvement, as evidenced by

creation of QSO, designed to provide assistance to the division in the areas of management systems, improvement initiatives, training, and customer focus. Senior leaders also strive for continuous improvement by implementing initiatives to address concerns collected from VOC and VOE surveys and by aligning employee training, education, and career development with BUS Division business plans. Division leaders ensure that employees are aware of and supportive of improvement actions by including them in preparation and execution of action plans.

The BUS Division Council sets organizational direction at biannual strategic planning

sessions (see Item 2.1). These sessions include a review of data and evaluation of past performance, including safety and environmental performance. The division's strategic goals, action plans, and targets derive from the needs and expectations of all key customer groups as determined from LANL goals, Appendix F contractual performance measures, and BUS Division VOC and VOE program results. Council members communicate goals and action plans to employees through team, group, and quarterly all-hands meetings. In addition, the BUS Division management team reviews goals and performance at all biweekly Division Council meetings.

The planning process used by BUS Division managers employs a line-of-sight process from high-level organizational goals to individual performance expectations. BUS group leaders develop group-level plans to support division goals. Using LANL's Performance Management System (see Item 5.1), managers then work cooperatively with employees to identify how each individual in the program is expected to contribute to the

vision. This methodology has become a cornerstone for the operations within BUS Division.

1.2 Community Leadership

Although BUS Division is a focal point of LANL interaction with the local community related to procurement issues, the division has minimal interaction with the public related to environmental issues. LANL has designated organizations, such as the Community Relations and Public Affairs Offices, to routinely handle interactions with the public. Presentations, discussions, and workshops specifically focused on environmental issues are typically coordinated through LANL's Environment, Safety and Health (ESH) Division or the Environmental Science and Waste Technology (E) Division. Other community interactions take place through the integrated outreach programs of LANL.

BUS Division is the LANL entity responsible for interacting with subcontractors and other resource and service providers. Thus the



Figure 1-5. BUS Division's safety web page.

division reviews and approves all sub-contracting plans (including environmental requirements as appropriate) and tracks the

performance of LANL contractors. A key aspect of LANL procurement is to support, whenever possible, local vendors, especially

small businesses and those owned by minorities and women. Each year the BUS Division Small Business Office (SBO) establishes socioeconomic goals and Northern New Mexico procurement goals. The SBO also provides mentoring and other training for vendors within the local economy.

The division is also responsible for tracking the performance of each LANL division and buying team in regards to procurement activity, including the purchase of environmentally friendly products and items with recycled content. Results in Item 7.1 show both LANL's and BUS Division's performance in supporting purchase of "green" products.

BUS Division's most successful environmental initiative, Mail Stop A1000, is an effort to recycle unwanted junk mail and other printed material. LANL employees re-address unwanted mail to MS A1000 and mail delivery personnel from BUS-4 collect and sort the material as part of their normal mailroom activities. In 1999 the program recycled over 204 metric tons of material. This program has received wide publicity both inside and outside LANL and is currently being considered for a White House 2000 Closing the Circle Award. The Closing the Circle Program, now in its fifth year, recognizes federal employees and their facilities for efforts that result in significant positive impacts on the environment in waste prevention, recycling, affirmative procurement (purchasing recycled products), environmental preferability, model facility demonstrations, and sowing the seeds for change.

Other BUS Division environmental accomplishments were presented in a poster

session at the 1999 DOE Pollution Prevention Conference in Albuquerque, New Mexico. Also, the LANL daily electronic newspaper, the *Newsbulletin*, featured results of BUS Division's pollution prevention initiatives in a story on February 16, 2000. These types of information sharing are open to stakeholders both within and outside LANL.

2. Planning for Continuous Environmental Improvement

2.1 Strategic Planning for Environmental Improvement

LANL has developed and uses as a guiding blueprint a strategic plan for the next five years. The current LANL strategic plan (available online to both the public and LANL employees) sets out major programmatic objectives and strategies. It also identifies environmental objectives related to most LANL major goals. In addition, a major objective of demonstrating operational excellence in all activities specifically calls out the following strategies:

- Achieve measurable improvements in safety and environmental stewardship through full implementation of ISM [which includes pollution prevention] throughout LANL.
- Manage wastes and hazardous legacy materials effectively and accept the challenge of minimizing the generation of hazardous wastes in the future, with a long-term direction toward zero emissions.

Each year LANL also produces an institutional plan, a five-year perspective on LANL operations. This document (available online to the public and to employees) identifies strategic requirements for LANL organizational units, including BUS Division; summarizes strategic, tactical, and programmatic plans; and helps ensure the integration of LANL activities with DOE priorities.

Based on LANL strategic directions and DOE requirements, BUS Division then develops its own strategic plan. BUS sets strategic direction by using input from employees, customers, and stakeholders. The BUS Division Council develops the business plan, appoints council members to champion the goals, then deploys teams of employees to improve in the goal areas. The BUS business plan is formally reviewed twice annually and updated once each year to assure the division is on course with customer expectations. Figure 2-1 gives an overview of the BUS Division strategic planning process, which includes input from each of the following:

- Past performance, as documented through such activities as management walkarounds (see Item 1.1), as well as results from process improvement efforts (see Item 6.2)
- Item 3.1 describes the general and specific measures from Appendix F that influence BUS Division focus. Category 7 presents

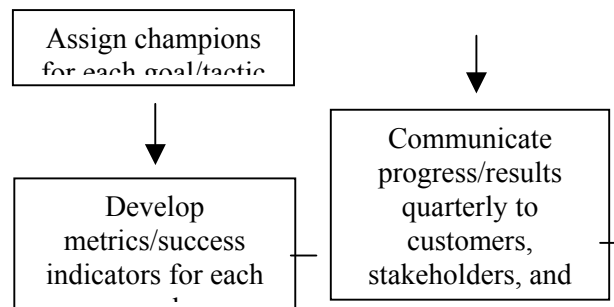
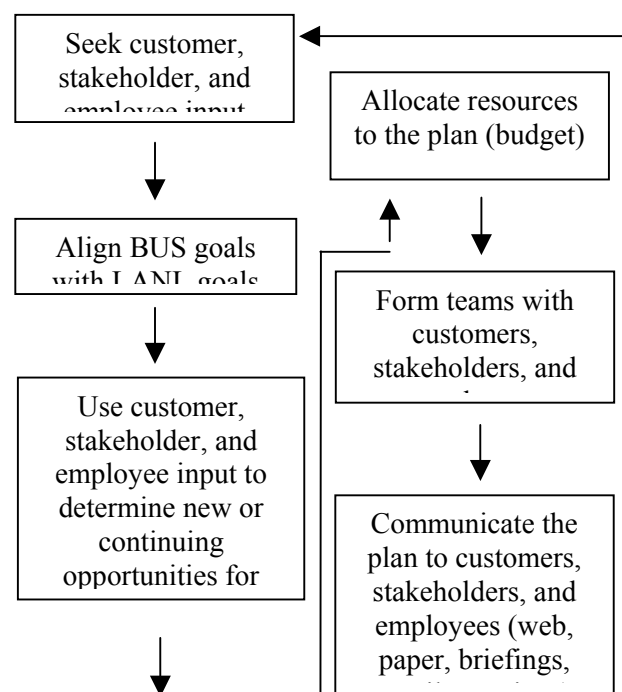


Figure 2-1. BUS Division's strategic planning process.

a wide range of results that are considered in division planning.

- Item 3.1 also discusses BUS Division's VOC Program.
- BUS Division also includes employee feedback gathered through the VOE Program, LANL's annual Employee Checkpoint Survey (see Item 3.1), and the LANL Upward Appraisal Program (see Item 5.2).
- Item 3.3 outlines the BUS Division advisory committee that provides additional data on best practices and industry standards.

In addition, through senior leaders' negotiations and assessments with DOE and UC stakeholders, BUS Division managers get a clear perspective of how stakeholders view BUS performance against LLNL and LBNL in the "competitive environment."

BUS Division planners have traditionally included such issues as worker health and safety in long-range plans. For example, the division routinely plans for ongoing review of employee ergonomic safety. But LANL has historically not viewed BUS Division as a major component in environmental issues, and there has been little impetus to include pollution prevention or resource minimization in BUS Division's strategic planning process. Similarly, other BUS Division customers and stakeholders have

tended to place limited emphasis on the division's environmental performance. Participation in the New Mexico Green Zia Environmental Excellence Program, with accompanying development of appropriate measures and performance indicators, is, however, allowing the division to begin incorporating such focus into long-range plans.

2.2 Action Planning

After identifying goals, the BUS Division Council names champions and devises actions, targets, and measurements of success. Most of the action plans are deployed by establishing teams of employees, customers, and stakeholders. Goal champions serve as a resource for teams and report progress to the BUS Division Council quarterly. Figure 2-2 shows the BUS process for developing action plans.

Focus on environmental performance, except in a few specific areas such as transport of hazardous materials, is relatively new to BUS Division. Because of this, none of the existing action plans include specific reference to pollution prevention or waste minimization. But because managers and employees recognize that inefficiency leads to waste, there is an ongoing effort to improve operations. Item 6.2 describes the method by which key division processes are analyzed and improved. These improvement efforts include action plans, which are regularly reported to management and tracked for successful completion.

Division involvement in the Green Zia Environmental Excellence Program and related pilot projects has led to an increased awareness of environmental concerns across

the organization. The division has begun to collect baseline data related to resource usage and waste generation that can provide a starting point for new efforts.

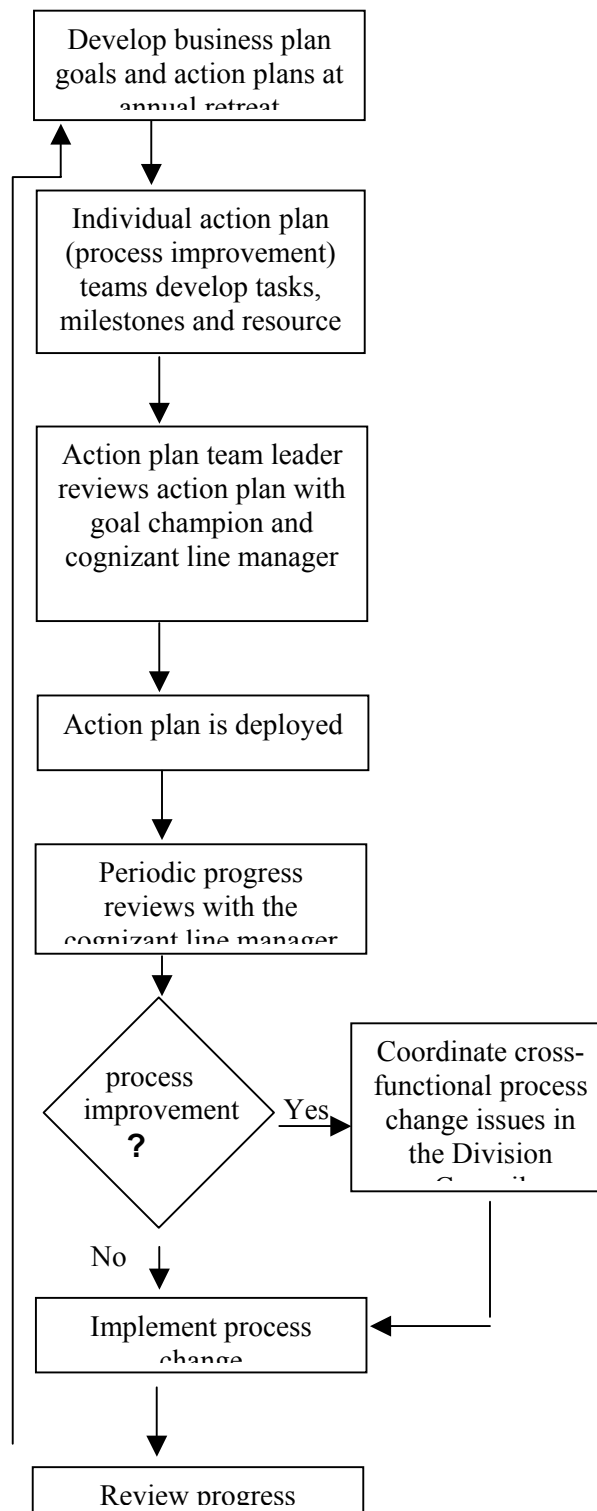


Figure 2-2. BUS Division's process for deploying and tracking action plans. Additionally, BUS Division's annual implementation strategy for ISM focuses on how to involve all employees in making this program a routine part of all operations. In combination with the leadership systems previously described, these efforts also contribute to the development and execution of action plans.

2.3 Integration and Implementation

Within BUS Division, QSO facilitates the multiple quality improvement project teams ongoing throughout BUS Division and tracks progress of the initiatives. Senior leaders formally review the plans quarterly to ensure the division is making appropriate progress and report this progress through group meetings and all-hands meetings. Quarterly Appendix F reviews document BUS Division performance, as does the final year-end assessment. BUS Division's contribution to overall LANL Appendix F environmental goals is also reviewed and documented quarterly and in a written annual assessment.

The planning process allows managers to closely tie both strategic and tactical activities to budget submissions and to plan for most effective movement of BUS staff to meet requirements. Priorities established in the business plan become the drivers in resource allocation in the budget process. The distributed business teams also drive human resource allocations. The ebb and flow of distributed personnel serving among individual technical divisions (customers) is driven by customer needs and requirements. The quarterly reviews allow managers to track resource allocations and to make any

necessary adjustments to either funding or human resource allocations.

BUS Division uses a formal CQI process to evaluate its operations. Teams, which are tasked with identifying and implementing efficiency improvements, use a formal process and associated improvement methodology and tools (see Item 6.2). Senior leaders charter the teams and track their progress on a regular basis. Results are incorporated into performance measures as part of gradient expectations.

Finally, development of clear strategic and action plans allows for full integration of performance requirements for each individual BUS employee. As Item 5.1 explains, objectives for each employee are designed to ensure that the organizational objectives are met and that the employee has a clear view of how his or her work requirements contribute to the success of the entire organization.

3. Customer, Supplier and Others Involvement

3.1 Customer Involvement

Just as frequent and open communication marks BUS Division's internal management practices, so does it characterize interactions with customers and stakeholders. The division is highly conscious of the need to fully involve all affected parties in seeking to improve the efficiency of work and demonstrating a sustainability ethic in daily operations.

The performance measures found in Appendix F of UC's operating contract provide clear expectations, increase accountability, and improve customer relations by addressing performance issues that concern DOE. Hence, Appendix F serves as a major vehicle for both determining customer requirements and performance levels for all of BUS Division's customer segments.

Appendix F contains approximately one hundred specific performance measures and associated goals. Of the ten major categories for evaluation under operations and administration, one category deals exclusively with financial management, one with procurement, and one with property. Thus, nearly 30% of the Operations and Administration portion of Appendix F deals specifically with work performed by BUS Division. While these measures demand a major focus of BUS Division activities, most do not relate directly to the division's environmental performance. BUS Division performance is, however, included in several of the Appendix F measures directly related to environmental excellence that fall within the functional area of environment, safety, and health. In addition to providing some specific data related to BUS Division performance, these environmental measures also show the division's contribution to overall LANL environmental achievement.

The negotiation steps for Appendix F measures, the process to set priorities, the improvement steps, and the resulting evaluations (see Fig. 3-1) all help focus BUS Division resources on key business processes and improve operational quality. Appendix F requires an annual self-assessment and evaluation by both UC and DOE, but BUS Division senior leaders also meet quarterly with UC and DOE representatives to discuss current progress against goals and to identify any issues. Senior leaders also interact more often with DOE and UC customers on an as-needed basis. The regular and frequent interaction helps prevent surprises, mitigate problems, and create a cooperative rather than an adversarial atmosphere.

In addition to identifying overall BUS Division performance expectations, Appendix F includes specific requirements related to collection and analysis of customer needs and to other aspects of customer focus, employee participation, and operational efficiency. For example, current Appendix F measures for financial management evaluate the division's ability to maintain systematic methods/ programs to collect information and determine internal and external customer needs and levels of satisfaction. Appendix F thus provides both the requirement and a mechanism to do process analysis and improvement related to customer input. Table 3-I shows a number of relevant Appendix F measures of specific interest.

All of BUS Division's customer focus approaches are based on the CSM model shown in Figure 3-2. Using the requirements and expectations data obtained by this model, BUS can align its business plan with customer priorities. The model also helps the division take action to improve customer satisfaction and close the loop with the customer.

Since 1995 BUS Division has used the VOC process as its primary method of determining longer-term (two-year planning cycle) customer requirements and expectations. Figure 3-3 shows the VOC process, which is also customized for use with employees as the VOE process. VOC is a one-to-one interviewing technique used to obtain key requirements from customers. The objectives of VOC are to

- baseline customer satisfaction with current services;
- capture and validate an understanding of customer wants, needs, expectations, and priorities;
- improve communication with customers; and
- close the loop on how priorities will be addressed (identify action plans).

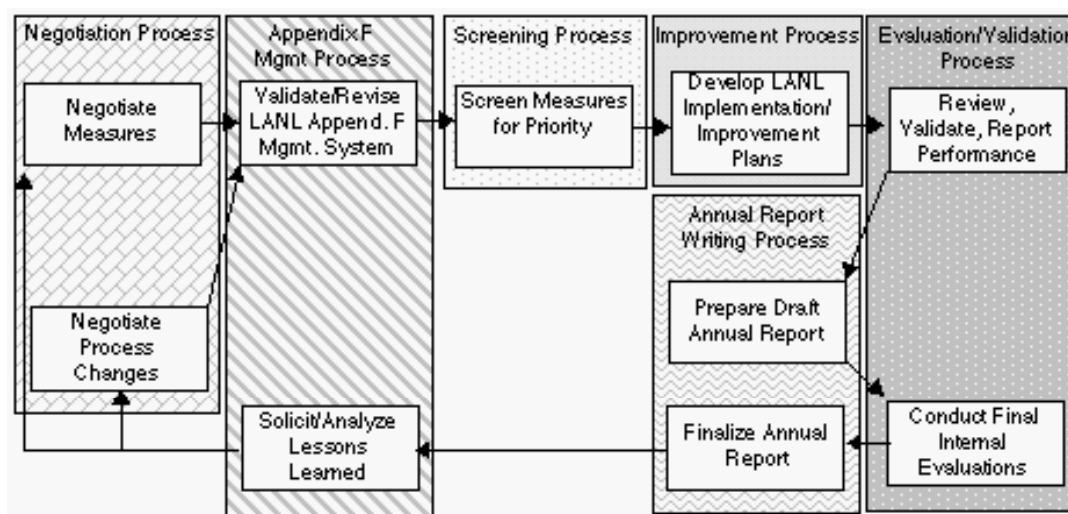


Fig. 3-1. LANL Appendix F Process (18-month continuous cycle.)

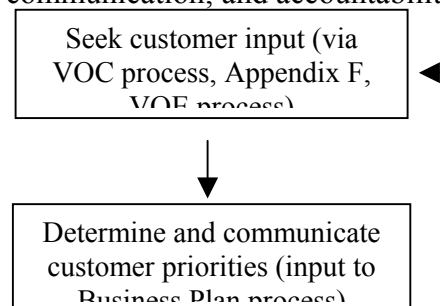
Table 3-I. Relevant Appendix F Measures.

Functional Area	Measure	Focus
Finance Mgmt	1.2.a	Customer satisfaction
Finance Mgmt	2.1.a	Quality products/services
Procurement	1.1.a	Assessing system operations
Procurement	1.2.a	Effectiveness/best practices
Procurement	1.3.a	Supplier performance
Procurement	1.4.a	Socioeconomic subcontracting
Procurement	2.1.a	Customer satisfaction rating
Procurement	3.1.a	Employee satisfaction rating
Property	5.1.a	Aligning customer expectations

In addition to the annual VOC Program carried out by division managers, each group leader also interacts with key LANL customers. This is especially true for distributed services, where managers meet with customers on a regular basis to assure that BUS Division is meeting performance requirements.

To gather feedback from BUS Division employees, division management relies on a

formal VOE Program. The process is structured much like VOC and is designed to gather and analyze issues of most importance to employees. In addition, BUS Division relies on two LANL programs, the annual Employee Checkpoint Survey and the Upward Appraisal Program. The Employee Checkpoint Survey monitors employee perspectives and contains standard types of questions in general categories including safety, productivity, and customer focus. The structure of the survey allows BUS senior leaders to perform comparisons with other operational divisions within LANL and also with other companies. For the past four years BUS Division has also participated in LANL's annual Upward Appraisal Program (see Item 5.2), which allows employees to provide direct feedback to managers regarding the supervisors' behavior and ability in areas such as environment, safety and health; communication; and accountability.



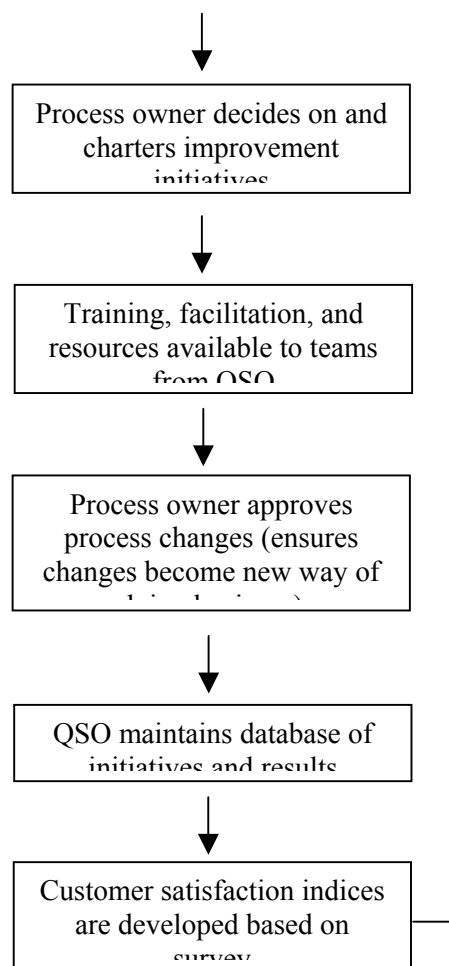


Figure 3-2. BUS Division's Customer Satisfaction Model.

BUS Division managers review the information from these instruments and use it to help establish goals and corrective actions. Finally, management walkarounds provide an opportunity for managers and employees to interact informally and to jointly review safety and environmental issues in the workplace.

To monitor public perception, BUS Division relies on a quarterly survey of public opinion, which LANL has conducted since 1990. The resulting reports profile New Mexico residents' views and identify results from

specific geographic areas around the state. In addition

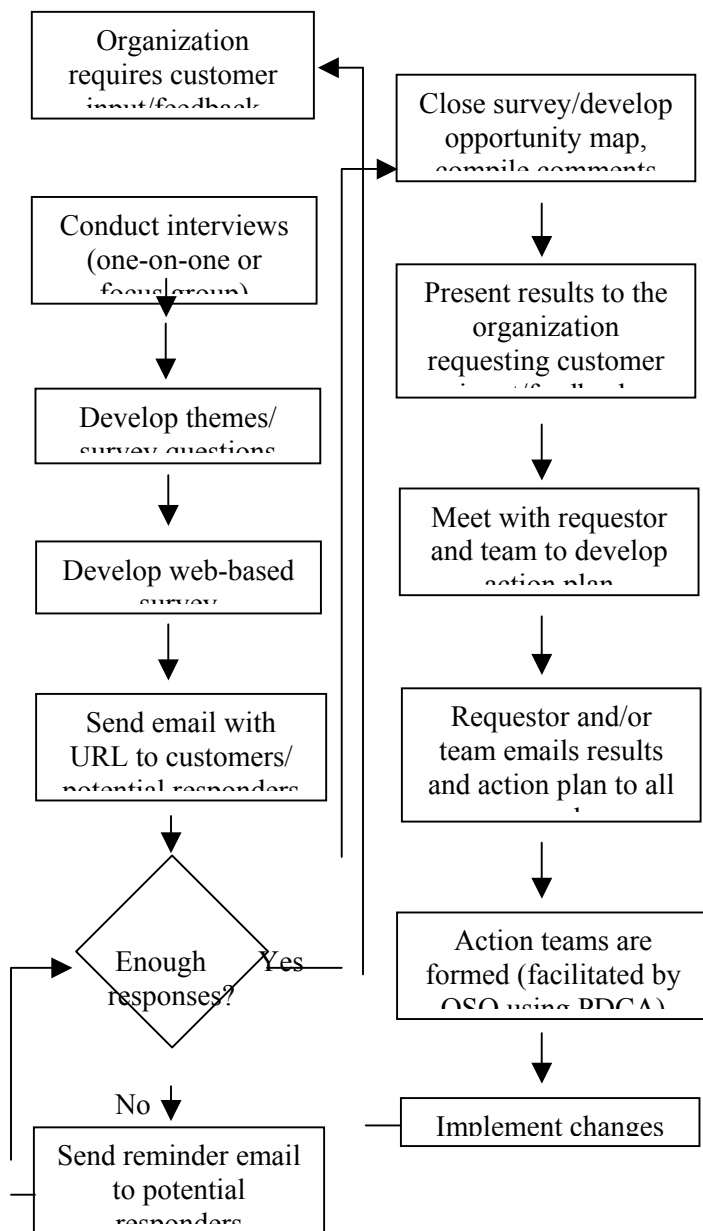


Figure 3-3. BUS Division's VOC/VOE process.

to asking about general perceptions of LANL, the survey specifically asks respondents their opinion of LANL's environmental responsibility. Results from the survey are

recorded, analyzed, reviewed, and used in planning activities.

BUS Division uses its world wide web site to communicate with customers, stakeholders, and suppliers, keeping all parties well informed of current and projected progress. The site contains extensive information, including program details, answers to frequently asked questions, and numerous forms that provide just-in-time data while minimizing paper consumption. All of the pages on the web site have electronic suggestion boxes, allowing users to send requests or comments to the immediate attention of the appropriate BUS Division staff. BUS Division's transition to electronic communications also encourages customers to conserve resources, as does the division's efforts to streamline processes (see Item 6.2).

As discussed in the overview, BUS Division is a non-profit organization with a fixed market (LANL) and captive customers. Therefore, criteria that call for information regarding expanding markets, developing business opportunities, or potential customers are not applicable.

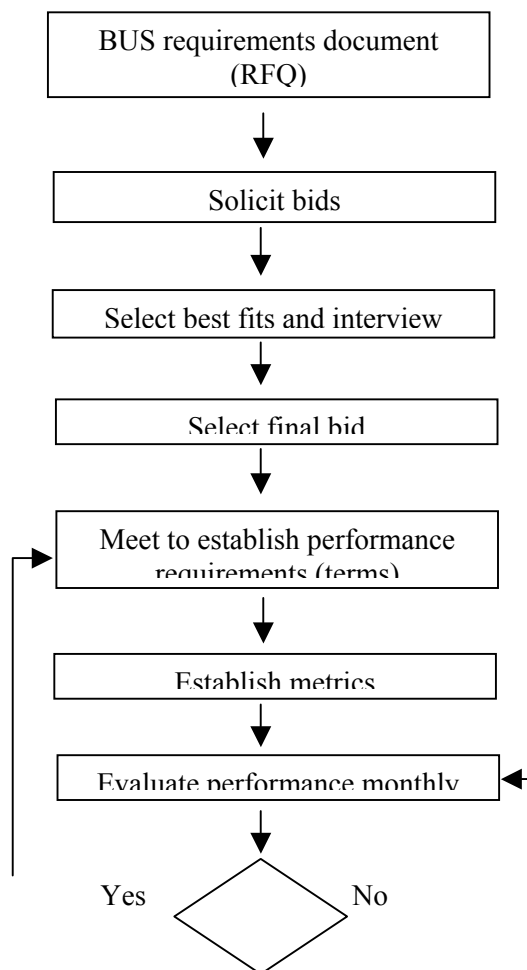
3.2 Supplier Involvement

In the past, BUS Division's opportunities to interact with vendors on the basis of environmental concerns have been limited. Although LANL financial policies require that most product/service purchases be coordinated through BUS Division, procurement personnel rely on the LANL organization requesting the services or products to specify requirements, including environmental considerations. Specific supplier requirements are defined for each supplier in a customized contract which is negotiated, implemented, managed, and evaluated by BUS procurement personnel. When data suggests that a change to the supplier's process be made, teams work with

the supplier to improve its process using PDCA. BUS Division is also responsible for evaluating the overall performance of suppliers, as specified in Appendix F.

In the contracting process for LANL, shown in Figure 3-4, BUS Division does employ several environmental considerations. For example, all new computers must be equipped with Energy Star, an energy saver function that turns off the monitor's screen when the computer is not in use. The division also makes a determined effort to ensure that purchased office products, including paper, contain recycled content.

Within the division itself, workers have conducted an audit to ensure that printers and copiers are set to automatically print double-sided, and new equipment will be required to have that capability. The use of electronic



————— Change? —————

Figure 3-4. The supplier management process.

messaging and a comprehensive web site also promote the minimization of paper usage. The division also promotes saving of wastes and expense associated with unnecessary travel by championing teleconferencing and distance learning.

3.3 Others Involvement

One of BUS Division's primary methods of communicating and involving other interested parties is through participation in the New Mexico Green Zia Environmental Excellence Program. The Green Zia Program is a state-wide initiative designed to encourage businesses to focus on pollution prevention as a economic business advantage. Established by the 1998 New Mexico legislature, the Green Zia Program is administered by the New Mexico Environmental Alliance, a partnership of state, local, and federal agencies; academia; business and industry; and environmental advocacy groups. The basic premise of the program is that waste is the result of inefficiency and by reducing waste a company can increase its profits. The environmental benefit is clear: waste that is never created does not pollute. Participation in the program gives BUS Division an annual third-party, independent evaluation of successes and opportunities for improvement in environmental performance.

Since June of 1999 BUS Division has been a major participant in a LANL Green Zia pilot project aimed at reducing waste generation and resource consumption in a typical administrative office environment. Working

cooperatively with LANL's Human Resources Division (HR), ESO, and facility managers from LANL's Facility and Waste Operations (FWO) Division, BUS Division has begun looking at operations in the Otowi Building, where many BUS employees reside. The project affects over 600 building occupants and involves a wide variety of stakeholders who are identifying wastes generated and resources consumed, determining existing baseline performance information, setting priorities for potential areas for improvement, and then developing and implementing improvement action plans. The project is producing specific, measurable results for actions designed to reduce waste, to lower consumption of resources, and to increase operational efficiency. In addition, the project is generating other less tangible but equally positive benefits. For example, the project allows all employees to become involved in pollution prevention and contribute to activities with measurable results. The project is also broadening the support base for the creation of LANL's pollution-prevention culture. In addition to producing short-term gains, the project is also setting the stage for longer-term improvements. Within the next few years the three-story Otowi building's approximately 75,000 square feet of carpeting and tons of metal flooring supports may be replaced. Participants in the Green Zia pilot program are encouraging LANL to install recycled carpeting and recycle the old carpeting and metal supports, which will have a significant positive impact on waste minimization.

Finally, BUS Division has established an external advisory committee to help the division assure that it is aligned with customer and stakeholder expectations and with best financial and business practices.

4. Information and Analysis

4.1 Information Collection Management

The Appendix F Process (see Item 3.1) is a key performance indicator of BUS Division's contractual requirements and also a measure of customer satisfaction. Appendix F data also allows the division to compare its performance with other similar government-owned, contractor-operated institutions. Managers monitor progress related to performance goals and use that information to develop and/or modify operational plans and to identify areas for improvement. Results presented in Category 7 show that overall scores in the Appendix F functional areas of financial management, procurement, and property management have improved over the past years or remain at a sustained high level, indicating DOE approval of performance in this area. In addition, BUS Division has received steadily increasing scores in several specific areas of Appendix F related to process analysis and improvement (see Item 7.1) and to customer needs analysis and satisfaction (see Item 7.2).

Many of the Appendix F measures evaluate total LANL performance in environmental arenas. Because the measures include all aspects of LANL operations, BUS Division's performance contributes to the ultimate evaluation score. BUS Division has identified the following LANL-wide environmental performance measures as being directly applicable to the division and closely monitors performance levels:

- management walkarounds (see Item 1.1);
- injury/illness prevention;
- utilities/energy conservation (this item includes three separate and distinct measures);
- source reduction and pollution prevention (this measure includes sanitary waste

reduction, recycling, and affirmative procurement).

LANL senior leaders also monitor progress toward full implementation of ISM (see Item 1.1). The ISM Project Office has established a detailed implementation schedule, available on an employee-accessible web site, and monitors all portions of LANL, including BUS Division, to ensure that milestones are achieved and that performance goals are met. A DOE audit of ISM in the fall of 1999 indicated that implementation is on track and that LANL efforts in this area are fully satisfactory. Another aspect of ISM is the institutional Safety Concern Program (SCP), a no-fault partnership between workers and managers to identify and resolve safety concerns. The program is designed so that managers receive electronic notification of the safety concern and the submitter receives periodic updates as the concern is tracked to resolution and closure. BUS Division managers track the issues raised by BUS employees to assure that issues are addressed and to identify the types of employee concerns.

In addition to monitoring its relative contribution to overall LANL institutional performance as measured by Appendix F, BUS Division also tracks information gathered through participation in LANL institutional programs. For example, senior leaders review results from LANL's public opinion survey and also analyze division-specific information from the annual Employee Checkpoint Survey and Upward Appraisal. Internal data—such as that from the VOC Program, the VOE Program, and from operational performance and improvements—also plays a role in management's review of BUS Division.

BUS Division leaders have also begun to gather baseline data on other aspects of the division's environmental performance.

- In addition to its contribution to overall LANL performance in injury/illness prevention, BUS Division specifically measures and tracks its own performance in this area.
- Division management recognizes that employee injuries and illnesses have a direct impact on productivity. Monitoring the effectiveness of management walkarounds also helps assure that managers are aware of and can correct potentially dangerous or unhealthy situations.
- This year for the first time BUS Division will receive impartial evaluation and feedback on its environmental performance through participation in the New Mexico Green Zia Environmental Excellence Program. Division senior leaders will begin tracking this measure and will use identified opportunities for improvement as initiation points for remedial actions.
- Many aspects of daily operations related to record-keeping are now being performed electronically. BUS Division has begun to measure and track the number of paper copies avoided by this change. A related measure is the amount of paper purchased by the division.
- Process changes save not only physical resources but also result in time and cost savings. BUS Division monitors process performance and tracks these savings in efficiency and effectiveness.
- BUS Division has a rough estimate of sanitary waste created at LANL's Otowi

Building where many BUS Division services are headquartered. ESO is currently implementing more precise measurement techniques that will allow BUS to more accurately monitor and track the sanitary waste it produces. Changes in measurement technique may also make it possible for BUS Division to monitor the amount of material it designates for recycling. Because ESO sells recyclable material, BUS may be able to track recycling income and related cost savings.

- The division monitors the effectiveness of its other recycling/reuse efforts. For example, the amount of recycled mail from Mail Stop A1000 (see Item 1.2) is tracked monthly.
- It is important to division managers that employees read and understand LANL regulations that impact how BUS Division does business. The LIR summaries on the BUS safety page (see Item 1.1) are an easy way for workers to review requirements. BUS managers monitor this web page to make sure employees are using the resource to understand environmental and safety regulations.
- Although BUS Division is included in overall LANL performance measures related to energy conservation, until recently there has been no way to directly measure the division's actual contribution. Metering changes implemented by facility managers from LANL's FWO Division may soon allow a more direct measurement of BUS Division's energy consumption along with more accurate evaluation of improvement efforts.

4.2 Analysis and Decision-Making

BUS Division managers systematically analyze data to develop the information necessary for wise decision-making. The strategic planning process described in Item 2.1 forms the basis for the annual roll-up of a comprehensive set of data. The division management team formally reviews the business plan semiannually. Quarterly, DOE provides feedback on BUS performance, and the division formally evaluates progress toward Appendix F goals. On a more informal basis, operational data is presented and analyzed at the biweekly management meetings that include all leaders within the division. BUS Division managers review all the data identified in Item 4.1 on at least an annual basis, with the majority of information being evaluated much more frequently.

The Appendix F measures also provide BUS Division with an opportunity to compare performance levels with both LLNL and LBNL, the two other research and development laboratories managed by UC for DOE. Not all Appendix F measures are applicable to all three laboratories, and some adjustments are made for individual institutions. While the comparison process is not always precise and does not constitute formal benchmarking, the side-by-side evaluation each year does provide interesting relative information and leads to identification of both best practices and areas for improvement.

5. Employee Involvement

5.1 Employee Education and Skill Development

LANL's Performance Management System (see Figure 5-1) requires BUS groups to establish objectives which support the organizational echelons above them. Objectives for each employee are then designed to ensure that the organizational

objectives are met and that the employee has a clear view of how his or her work requirements contribute to the success of the entire organization. The system thus ensures that employees know what job results are expected, how they are expected to perform work, how their performance will be reviewed by others, the impact their contributions have on achieving the organization's objectives, and how this is tied

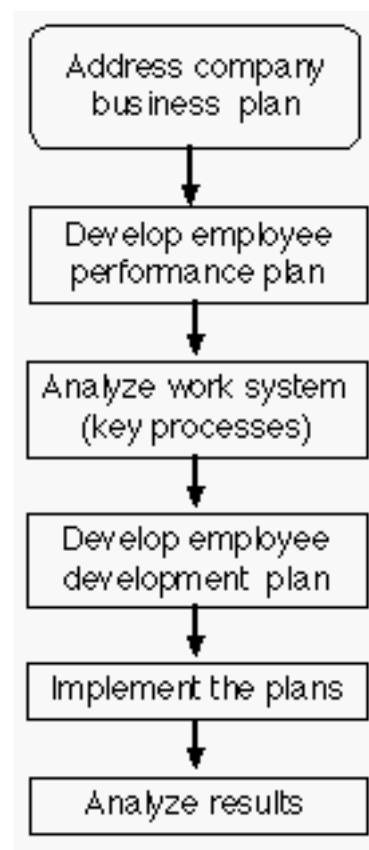


Figure 5-1. LANL's Performance Management System.

to rewards or consequences. The Performance Management System ensures clear two-way communication during the goal-setting phase of the process and provides a focus for ongoing discussion about work objectives and processes. Specific goals include

- aligning individual expected results with institutional goals,

- identifying and assessing individual performance results/accomplishments,
- evaluating performance of institutionally defined behaviors,
- describing how individuals helped to meet organizational objectives,
- linking performance to rewards or consequences,
- designing development plans to support improving performance in current jobs and/or increasing impact on the organization,
- enhancing employee/manager ownership of individual and organizational performance,
- improving two-way communication between supervisors and employees.

As part of performance management, BUS managers also work with each employee to cooperatively prepare individual development programs—both short-term and long-term—on an annual basis. As employees and their managers work together to identify how they will contribute to group and division business plans, they identify the need for new skills and competencies and jointly develop a growth plan. It is then up to BUS managers to supply the resources (time, money, and support) to enable and encourage the employee to accomplish his or her development plan. Throughout the year the manager and employee evaluate the development and learning objectives to address changing employee and company needs.

Once developmental goals have been established, employees may participate in appropriate training offered by LANL or other organizations. LANL's ESH Division offers over forty courses related to environmental issues, from general safety training and first aid to courses on such specific topics as packaging and transporting hazardous materials. Training may be used to improve

skills needed for current job performance or to develop new capabilities.

Communication, cooperation, knowledge, and skill-sharing among individuals and teams is accomplished through regular meetings and participation on CQI teams. Quarterly forums for financial personnel provide a learning environment that helps BUS address current and changing operational and business requirements, share best practices, and provide training on new processes.

BUS employees may also participate in LANL's institutional career development program, which helps identify skills gaps and excesses. Using available information and training, employees can choose to enhance their existing skills or to further develop other skills that LANL needs now or for future programs.

Training programs are a key component to assuring actions by workers that reflect integrated plans. HR Division's training generalists work with BUS managers and employees to identify specific training requirements for work being performed, establish appropriate programs, enhance quality, and assure continuity between all aspects of training. Training on standardized practices such as emergency operations is conducted on a LANL-wide basis. Site- and task-specific training is also provided for BUS Division projects and facilities.

As an informal training mechanism, BUS Division maintains a library of 120 safety videos. These videos are available for use at group or team meetings or may be checked out by individuals.

As a recent initiative, during the past four months, BUS managers have invited members of LANL's ESO to give presentations at

various group and division meetings. These talks focus on general pollution prevention and energy conservation and are designed to increase BUS employee focus on environmental considerations.

Another new focus is participation in the New Mexico Green Zia Environmental Excellence Program and use of the Green Zia tools for environmental excellence. Since June of 1999 BUS Division has been part of a cooperative pilot project to identify ways to reduce pollution and minimize resource usage in a standard office environment. Submission of this award application is part of an ongoing division effort to more effectively and systematically focus on environmental performance. Figure 5-2 shows how BUS Division will achieve this goal and how the division's efforts will contribute to LANL success.

The division's training program is assessed in an ongoing manner through informal employee feedback and is evaluated formally through the BUS Division VOE program.

5.2 Employee Involvement

A major emphasis in BUS Division is that every employee understand his or her role in achieving organization and institutional goals, including those related to environmental performance and pollution prevention. For example, the ISM implementation strategy developed for the division emphasizes employee understanding and involvement. This emphasis is fully in keeping with the BUS Division value of creating a safe work environment (see the Overview). BUS senior leaders offer employees a wide variety of ways to have an influence on how the division conducts business.

To encourage communication, all managers, including the division director, observe an open-door policy. Employees may also provide comments and observations at group meetings and the quarterly all-hands meetings.

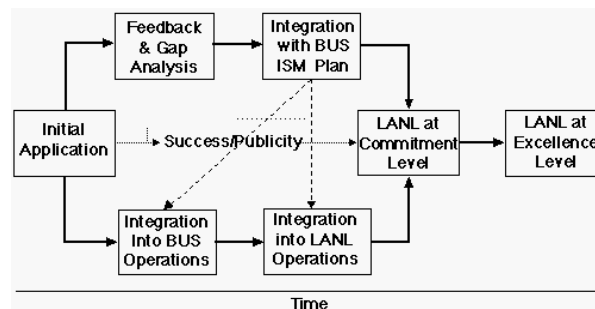


Figure 5-2. LANL's and BUS Division's Green Zia plans.

The annual Employee Checkpoint Survey and the Upward Appraisal Program provide ways for employees to give anonymous input. Employees can also address issues and questions to BUS Division's Safety Coordinator and the division Safety/Ergonomics Committee. LANL's ESO has also established an electronic mechanism for soliciting employee input on pollution prevention. BUS Division employees, as well as any LANL employee, can send comments, observations, or questions to wastenot@lanl.gov. The message will be routed to the environmental expert best able to respond, the sender will be notified of any proposed action, and ESO will track the issue to resolution.

In addition to providing input, BUS Division employees have the opportunity to work toward improved organizational performance. Improvement of company processes begins with feedback from customer or employees and leads to the formation of CQI teams (see Item 6.2). All BUS teams use the PDCA approach, and employees are trained in QUEST 2001, an improvement methodology based on the philosophy of W. Edwards Deming. The employee-based CQI teams are

empowered to test and implement solutions that prove to be the most effective in achieving division objectives and customer requirements.

Senior leader ensure that the division's human resources are properly aligned to carry out proposed action plans. The alignment process begins with the annual strategic planning update. Leaders develop long-term priorities and projections and ensure that adequate resources are available. As projects evolve, leaders use quarterly or monthly reviews of action plan progress to ensure that resources continue to be adequately aligned.

BUS Division leaders communicate environmental information in a variety of ways. In addition to the normal flow-down of reports through regular all-hands and group meetings, managers devote specific attention to discussing Appendix F reviews, Employee Checkpoint Survey results, and Upward Appraisal feedback as those reports become available. The Upward Appraisal Program, in particular, sets specific expectations for managers to review feedback with subordinates and to develop action plans for improvement. Figure 5-3 shows the overall Upward Appraisal process; Figure 5-4 describes the process for using feedback.

BUS Division assists the entire LANL community in pursuing safe and environmentally sound policies. For example,

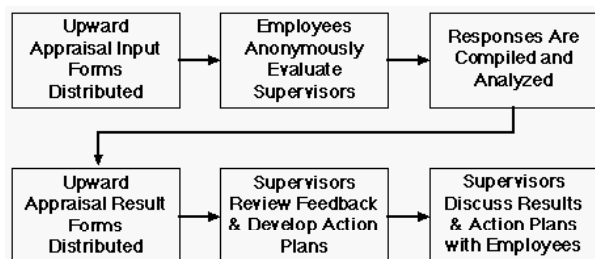


Figure 5-3. LANL's Upward Appraisal process.

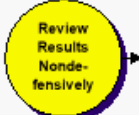



BASIC PRINCIPLES OF USING THE FIVE STEP MODEL TO ACCEPT AND USE FEEDBACK	
FEEDBACK IS MOST HELPFUL WHEN YOU . . .	WHY?
	If you are preparing your defense as you read, you can miss valuable points; be open to information and suspend mental responses or justifications.
	If patterns emerge they can help you prioritize areas for development. The stronger the trend, the more likely it is that the information is important.
	This "stop and think" step is extremely important so that you analyze trends or comments and put them into perspective prior to action planning and making your response known through discussion with others.
	Based on your reading and reflection, you can determine the areas in which you see the most need for development as a manager—and determine specifically how you will go about meeting those needs. Research shows that specific, written action plans or goals have a very high implementation rate compared to goals that are not concrete.
	If you thank your employees for their feedback and let them know in a meeting how you plan to respond, it will keep the door open for better communication all year. This is a good opportunity to ask for input into your action plans, which could strengthen them. Also, prepare to discuss results with your immediate manager, who is expected to use the results as part of your individual development plan and/or appraisal.

Figure 5-4. The five-step model for accepting and using Upward Appraisal feedback. the division's ergonomic program has been so successful that the LANL ergonomics committee is using the BUS program as a model for the entire institution. This awareness of ergonomic safety also translates into workers who are safety and health conscious at home and in their communities. The Property Management Group, BUS-6, is responsible for encouraging efficient use of equipment and supplies throughout LANL. When employees have personal property that is no longer need, a BUS property administrator can ensure that it is re-used. BUS-6 also maintains an electronic Swap

Shop where excess property is made available to the rest of LANL.

BUS Division's efforts to impact the environmental and safety culture of the surrounding communities begins with the Laboratory Director's "Six Zeros" (see Item 1.1). One of the goals is to have zero injuries or accidents off the job. Thus, employees are expected to translate the LANL safety culture to their own homes and families.

Efforts to promote carpooling are an example of how BUS Division encourages employees to minimize the environmental impact of their work duties on the local community. Near the Otowi Building, LANL has established reserved parking for high occupancy vehicles. And the LANL daily *Newsbulletin* maintains an electronic "Commuter's Corner" where prospective carpoolers can advertise or look for ride-sharing opportunities. BUS Division is also responsible for oversight of government vehicles use at LANL. One way to reduce vehicle exhaust is to switch to alternative-fuel vehicles. BUS-6 has recently leased twenty-four electric trucks for use around LANL and has been working cooperatively with DOE and the Clean Cities Program to establish an ethanol fueling station in Los Alamos.

5.3 Employee Satisfaction, Value and Well-Being

The BUS Safety goal (refer to Figure 0-4) and related action plans support a safe work environment for employees and ensure that BUS performs work safely and in an environmentally friendly manner by building on LANL safety programs such as ISM.

BUS Division's major formal method for determining employee attitudes and the climate in the workplace is the annual LANL Employee Checkpoint Survey, which has been

used for the past five years. The survey contains standard types of questions in general categories including safety, productivity, and customer focus. A second major method is LANL's annual Upward Appraisal Program, which allows employees to provide direct feedback to managers regarding the supervisors' behavior and ability in areas such as environment, safety and health; communication; and accountability. BUS Division managers review the information from these instruments and use it to help establish goals and corrective actions.

The ISM program assists BUS Division managers to conduct monthly walkarounds in their areas, looking for and correcting ergonomic concerns and work area hazards such as obstructed walkways, improper electrical usage, and violations of forklift safety or hazardous material handling. The ISM database tracks deficiencies until resolution and compiles them to identify and improve BUS safety performance. Furthermore, the BUS safety policy encourages managers to meet with employees to discuss individual safety commitments and hazards identified with each job. BUS employees may enter and track their own safety issues through the web-based Safety Concerns Program (see Item 4.1).

Employees also contribute by serving on the BUS Safety/Ergonomics Committee, where each group—including the division office—is represented. Committee members are responsible for promoting activities that motivate BUS employees to work safely; conducting events for the division that keep safety awareness alive; and tracking, trending, and analyzing environmental, health, and safety areas for improvement. Some of these committee members also belong to various Laboratorywide committees such as Grassroots Safety Volunteers, Labwide All Days Are Safety Days, Institutional

Ergonomics, and Laboratory Standards Working Group. These committees serve as a method for sharing ideas and initiatives related to ISM implementation across the institution.

BUS Division has established two specific awards to encourage employee focus on safety and environmental performance. EARN BUCS recognizes employees on-the-spot for their good work relative to safety and customer service. Employees can accumulate EARN BUCS points and exchange them for gifts. The On-the-Spot Safety Awards Program provides immediate awards, such as T-shirts or coffee mugs, for safe behavior and reinforces the BUS value of performing all work safely.

There are also institutional incentives to encourage staff to work smarter and utilize innovative approaches to accomplish their work. The Pollution Prevention Awards Program, sponsored by LANL's ESO, is open to all LANL employees and subcontractors. It is designed to encourage individuals and teams to develop plans, programs, or ideas for minimizing waste; conserving water, electricity or natural gas; reducing air or water pollution; or procuring products with recycled content. Recipients of the awards receive recognition and a cash grant from specially allocated congressional funds. The Los Alamos Awards Program, administered by LANL institutionally but tailored for application at the division or program level, provides a link between the organization's mission and those employees or teams that achieve significant accomplishments toward that mission. BUS Division managers use the program to recognize exceptional contributions and noteworthy achievements by awarding their employees, either individually or as teams, cash awards ranging from \$250 to \$2000.

As part of the larger LANL community, BUS Division relies primarily on institutional programs to enhance support for employees. LANL offers a comprehensive set of support initiatives along with feedback systems. Division employees are encouraged to use all LANL services that are appropriate and relevant to their individual needs.

To provide emotional support, LANL provides an Employee Assistance Program (EAP) whose main goal is to assist employees with personal problems that are affecting their job performance. The EAP also offers a wide variety of presentations and workshops on such topics as stress management, gender issues, conflict resolution, and smoking cessation. The EAP also makes available a collection of books, videos, and audio tapes on workplace issues. The program is available free of charge. Usually employees refer themselves; however, a supervisor can refer an employee if job performance has been identified as a problem.

For employees' physical well-being, LANL maintains a Wellness Center. The center offers equipment and specific areas for weight training and aerobic exercise in individual and group formats. Use of the center for individual exercise programs is offered free of charge. The center also provides, usually for a small fee, a wide variety of exercise and health programs including stress management, healthy eating, aerobics, yoga, and cardiovascular fitness. The center offers individual fitness evaluations for a nominal fee. The center monitors daily use numbers and has completed user satisfaction surveys along with participant evaluations.

BUS Division employees may choose between two basic work schedules, a traditional 5 day/40 hour week or a new 9 day/80 hour

schedule which allows employees every other Friday off. In addition, BUS Division allows employees, with prior agreement of their managers, to use some flexibility in their regular work schedules to meet personal needs.

LANL provides employees and managers formal guidance on administrative reviews and grievances. In addition to this formal support, the institution provides responses to informal queries as well as guidance to employees or management on relations in the workplace.. Specific support is available on such subjects as counseling, sexual harassment, violence in the workplace, and interpersonal skills.

An Ombuds Office, available to any individual in the workforce, provides services including addressing work-related issues, assisting employees in obtaining services, or expediting actions. The Ombuds Office also provides a Mediation Center—available to all members of the workforce—which provides a structured approach and environment to resolving issues between employees or between management and employees.

6. Process Management

6.1 Process Characterization and Control

In addition to an internal desire to continuously improve operational performance, BUS Division has additional customer requirements that make process evaluation and improvement necessary. Appendix F provides both a requirement and a mechanism to do process analysis and improvement, including formal benchmarking. Table 6-I shows current Appendix F measures of relevance to BUS Division that require process characterization and control.

The BUS Division customer-supplier model (see Figure 6-1) shows how BUS uses supplier input from customers, stakeholders, and employees in designing and improving processes. The outcomes tell the division how well it is providing services and are used in the strategic planning process (refer to Item 2.1) to make decisions which are communicated for action to process owners. CQI teams are made up of process owners (the employees who do the work) and customers. Customers both provide input and receive the output of the processes. For example, customers, stakeholders, and employees act as suppliers by providing input but also are customers because they receive the output of the product or process being designed.

Formal operational assessments occur during quarterly, semiannual, or annual reviews (see Item 4.2), but leaders may also consider operation performance at any of the biweekly management meetings. BUS Division leaders use the wide variety of data described in Item 4.1—including data from customers, employees, and operational reviews—to assess the performance of key processes. Customers, including both LANL employees and LANL managers, are intimately involved in process evaluations through their input to the VOC process. Employees provide operational evaluations through their input to the VOE process. Both DOE and UC stakeholders are active participants in establishing performance expectations and in evaluating operational achievement through the Appendix F process (see Item 3.1).

The Appendix F process is one method by which division leaders may identify best practices and compare BUS Division

Table 6-I. Appendix F Measure Requiring Process Characterization and Control.

Functional Area	Measure	Title	Requirement
Financial Mgmt	2.1.a	Quality Products and Services	Evaluate products/services for timeliness, accuracy, completeness, usefulness, clarity, and added value
Financial Mgmt	2.1.c	Quality Processes	Evaluate processes for effectiveness
Financial Mgmt	2.2.a	Demonstration of Improvements	Evaluate processes for improvement towards best practices as compared with benchmarking information
Procurement	1.1.a	Assessing System Operations	Develop and use a system evaluation plan
Procurement	1.2.a	Pursuing Best Practices/Measuring Effectiveness	Evaluate processes against benchmarks and industry standards
Property Mgmt	4.1.a	Assessing Support Processes	Evaluate property management system
Property Mgmt	6.1.a	Measuring Cost Efficiency/Effectiveness	Measure ability to balance process costs and performance

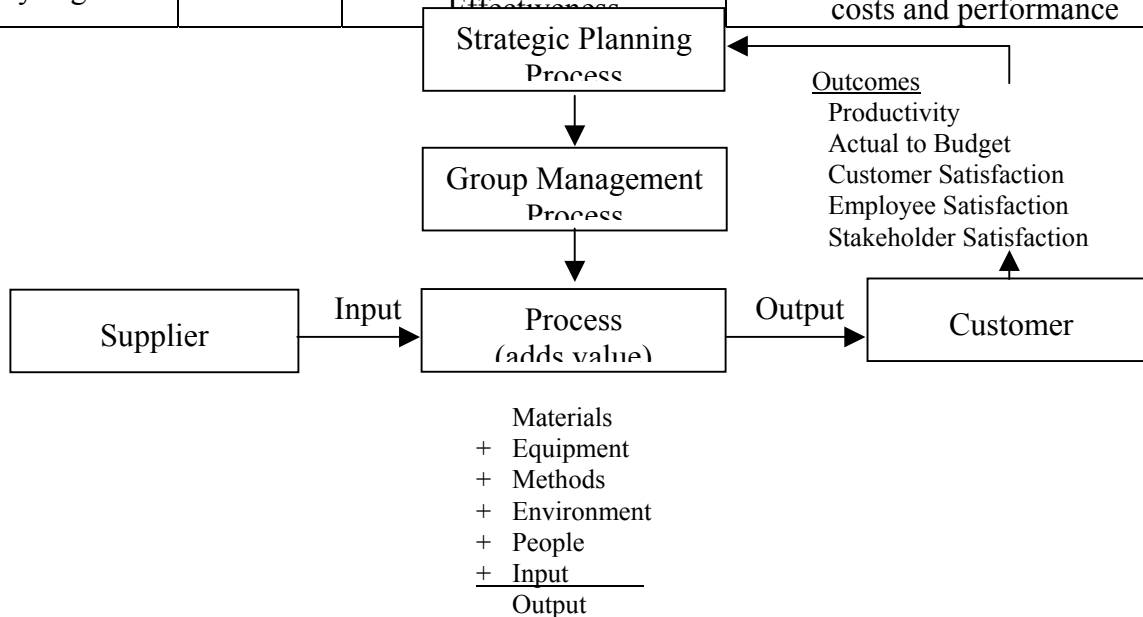


Figure 6-1. The BUS Division customer-supplier model.

performance with the performance of competitors. The division also uses strategic benchmarking to identify ways to avoid failure or loss and to maintain or improve efficiency.

BUS Division is using participation in the Otowi Building Green Zia pilot project (see

Item 3.3) to focus on ways to reduce waste generation and resource consumption in division processes. In cooperation with other project participants, BUS division employees are identifying wastes generated and resources consumed, determining existing baseline performance information, setting priorities for potential areas for improvement, and then

developing and implementing improvement action plans. The project is producing specific, measurable results for actions designed to reduce waste, to lower consumption of resources, and to increase operational efficiency. In addition, the project gives all employees another avenue for providing input regarding the environmental performance of division processes.

To strengthen the division's ability in process management, BUS Division partnered with Motorola to develop a three-level project management course that is available to division employees. BUS has also partnered with the University of New Mexico to develop and offer at the Los Alamos branch a master's certification in project management. QSO also teaches process improvement methods through the QUEST 2001 course (see Item 5.2) to interested organizations throughout LANL.

6.2 Process Improvement

As Item 6.1 explains, BUS Division has a contractual mandate to continuously monitor and analyze processes for potential improvements. Use of Appendix F as a framework for process analysis and comparative evaluations is a mature, seven-year-old system that has yielded significant improvement in most areas reviewed.

BUS Division uses a systematic CQI process to analyze and upgrade its processes on an ongoing basis. For product and service production/delivery processes, BUS Division relies on a generalized evaluation and improvement methodology based on Deming's PDCA cycle, which is similar to the Green Zia process improvement system (see Figure 6-2). The system requires a Plan to test the process, Doing the test, Checking the results, and Acting on the results by either implementing or making changes to the

process. PDCA forms a framework within which managers and improvement teams employ a variety of tools and techniques to address opportunities for improvement. The goal is to help managers

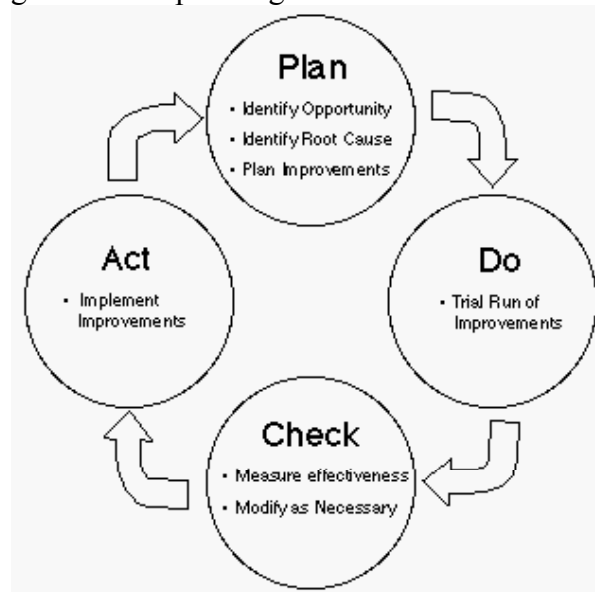


Figure 6-2. BUS Division's PDCA cycle.

most intimately involved with day-to-day operations have the flexibility to determine how best to maintain optimum process performance and meet customer expectations. This process ensures that, based on regular and frequent customer interactions, managers will select and monitor those key in-process measurement most appropriate for each individual project and process. While this process has so far been used minimally to address environmental improvement issues, it is the formal way BUS Division handles overall process improvement.

Once a process has been designated as needing improvement, based on frequency or number of complaints or on perceived inefficiencies, senior leaders charter a CQI team. Employees are frequently invited to volunteer for such improvement teams, and in some cases employees with specific process knowledge are appointed to the CQI team by

management. Much like the Green Zia improvement methodology, the PDCA cycle uses a flow chart to identify key aspects of a process. The CQI team then analyzes problem areas, focusing on root causes and using tools such as a cause-and-effect diagram. Next the CQI team identifies possible alternatives and creates an action plan. Finally, the team selects and implements the most appropriate change and monitors the revised process to ensure the change produces the desired improvement.

Results from improvement efforts are communicated to senior leaders at the biweekly management sessions and as part of the Appendix F quarterly assessments. Employees learn about process improvements at the all-hands meetings and through information published electronically or as memos from QSO.

7. Results

7.1 Environmental Results

Table 7-I shows the initiatives considered by BUS Division as part of its participation in the Otowi Green Zia pilot project (see Category 3.3). Some activities were new projects; some made more extensive use of existing LANL programs. BUS Division implemented all but

Table 7-1. Initiatives Considered as Part of the Otowi Building Green Zia Pilot Project.

Focus Area	Possible Initiatives	New/Existing
Paper Use	<ul style="list-style-type: none"> Wider use of two-sided printers/copiers Recycling of shredded paper Wider use of electronic documents 	New Existing Existing
Cardboard Recycle	<ul style="list-style-type: none"> Promote more extensive recycling Use compacting recycling bins 	Existing New
Reuse/Recycle of Office Supplies	<ul style="list-style-type: none"> Develop systematic reuse of surplus office supplies 	New

two of the initiatives (styrofoam and computer disk recycling).

Figure 7-1 shows the trends in paper usage within BUS Division. As long ago as 1995 BUS Division began converting many of its forms to online documents and also began storing records electronically. These activities have saved over 45,000 sheets of paper annually in the Accounts Receivable section of the division (see Figure 7-2). The division has also begun an emphasis on two-sided printing and systematic recycling of scrap paper.

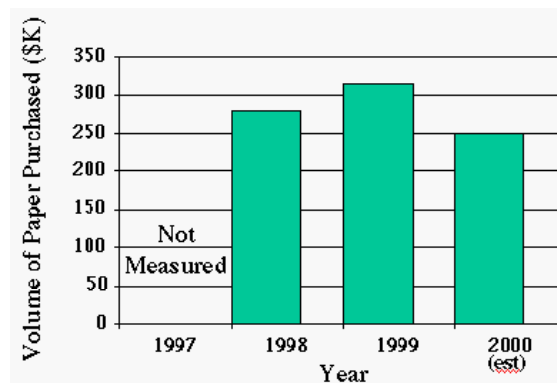


Figure 7-1. BUS paper purchases.

General Recycling	• Recycle aluminum cans	Existing
	• Recycle styrofoam	New
	• Recycle computer disks	New
	• Segregate food-contaminated waste from recyclable waste	New
	• Include recycling options in planned building upgrades	New
Reuse of Office Equipment	• Publicize equipment swap web site	Existing
	• Make better use of surplus equipment	Existing
Mail	• Use Mail Stop A1000 (mail recycle)	Existing
	• Use Stop Mail (junk mail elimination)	Existing
Procurement	• Make better use of affirmative procurement	Existing
Pollution Prevention Awareness	• Develop facility-specific guidelines	New
	• Schedule P2 lectures	Existing
	• Participate in New Mexico Green Zia Environmental Excellence Program	New

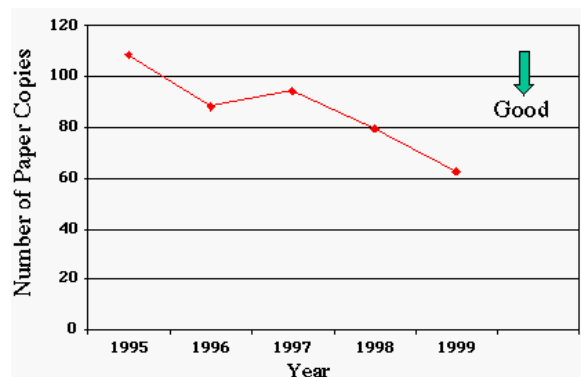


Figure 7-2. Number of paper copies made in Accounts Receivable.

Figure 7-3 shows BUS Division's performance related to affirmative procurement. This is a LANL-wide effort to purchase products with recycled content. In 1998 the division's overall rate was 70.4%; by 2000 the rate has improved dramatically to 85.1%.

Figure 7-4 shows the baseline measurement BUS Division made this year to determine the amount of sanitary waste created by division employees housed in the Otowi Building.

Improvements in measuring capabilities being implemented by ESO will allow BUS Division to begin trending this information and identifying opportunities for improvement.

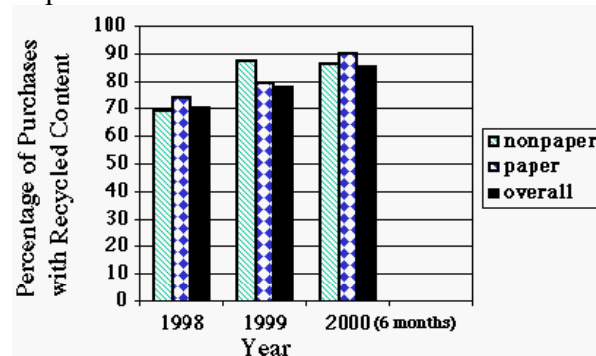


Figure 7-3. BUS Division's purchase of material with recycled content.

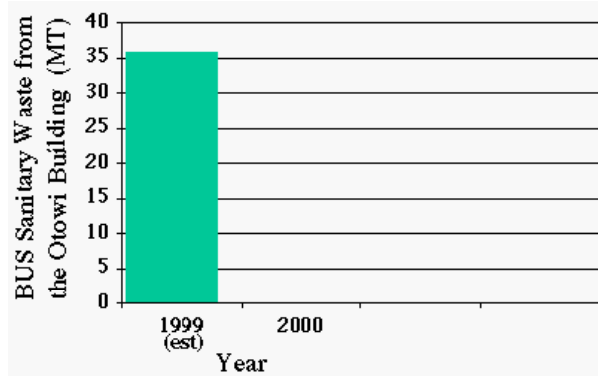


Figure 7-4. BUS Division's baseline measurement of sanitary solid waste from the Otowi Building.

Figure 7-5 shows the amount of mail and other material recycled as part of BUS Division's highly successful program, Mail Stop A1000 (see Item 1.1).

Figure 7-6 shows LANL's overall score on the utilities/energy conservation measures of Appendix F. The scores were initially high, have maintained a steadily improving trend, and compare favorably to LLNL scores. BUS Division contributes to LANL's overall score, but current LANL infrastructure limitations prevent the division from identifying a unique, quantifiable contribution.

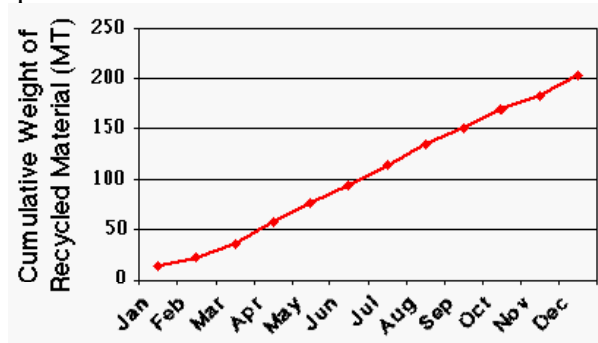


Figure 7-5. FY99 cumulative amount of recycled mail and other printed material from BUS Division's Mail Stop A1000 program.

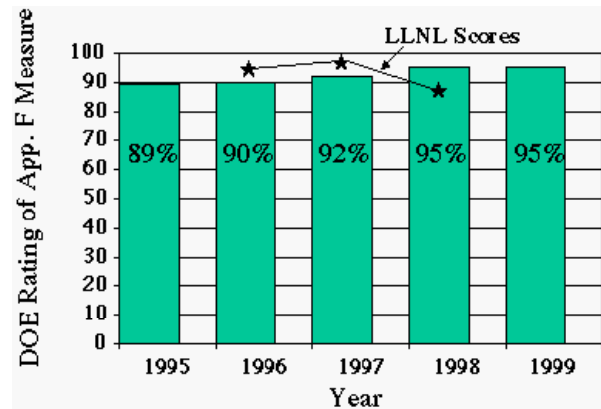


Figure 7-6. LANL's Appendix F scores related to utilities/energy conservation.

Figures 7-7 through 7-9 show the division's scores in three areas of the Employee Checkpoint Survey: communication, job satisfaction, and safety. For the past three years division scores for all three areas have remained consistent with overall LANL scores. These annual measures of employee satisfaction provide BUS Division senior leaders with direct input on employee concerns related to environmental issues.

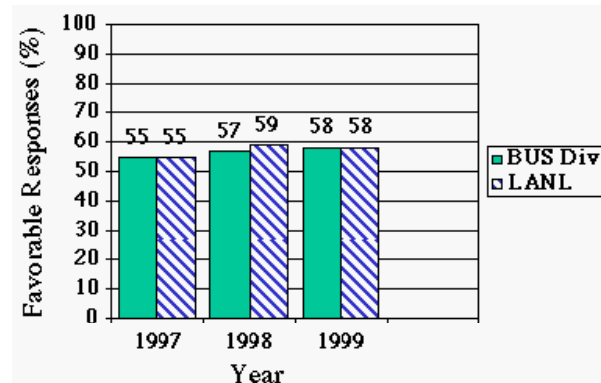


Figure 7-7. BUS Division's Employee Checkpoint Survey scores related to communication.

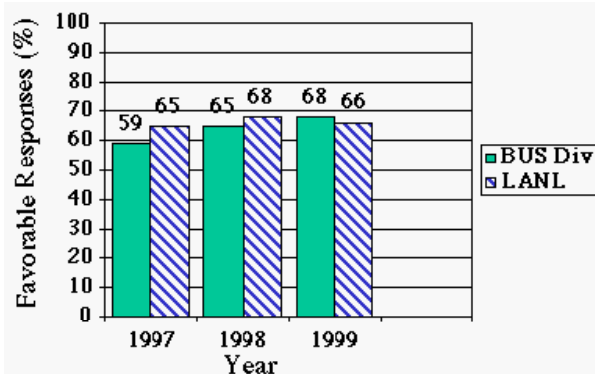


Figure 7-8. BUS Division's Employee Checkpoint Survey scores for job satisfaction.

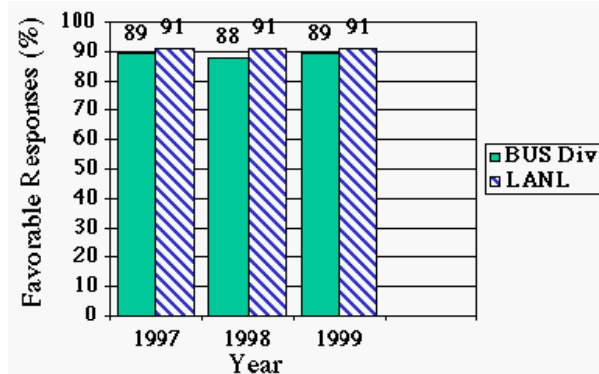


Figure 7-9. BUS Division's Employee Checkpoint Survey scores related to safety.

Table 7-II shows the composite scores for more than 30 BUS Division managers on LANL's Upward Appraisal evaluation. Of the twenty categories evaluated, nine have a direct impact on environmental performance. For the last three years the scores have generally remained at a steady high level and are very close to the average score for all LANL managers. Between 1997 and 1999 scores in most categories have improved approximately 0.2 point on a five-point scale. Figure 7-10 provides another view of the data. Given the small variation in scores, it is impossible to establish a statistical trend.

Table 7-II. Average Upward Appraisal Scores for 30+ BUS Division Managers

Evaluated Characteristic	1997		1998		1999	
	BUS	LANL	BUS	LANL	BUS	LANL
Actively implements ES&H policies/procedures	4.29	4.45	4.27	4.42	4.51	4.49
Communicates openly and honestly with employees	3.95	4.08	3.92	4.01	4.11	4.14
Supports training and development for employees	4.27	4.31	4.15	4.27	4.32	4.33
Involves employees in planning and decision making	3.74	3.77	3.78	3.75	3.94	3.88
Expects employees to continuously improve	4.33	4.33	4.34	4.29	4.45	4.37
Models behavior he/she expects in others	4.06	4.11	4.01	4.07	4.25	4.21
Holds employees accountable for their						

performance	4.41	4.42	4.56	4.43	4.57	4.47
Promotes cost-effective work practices	4.13	4.11	4.12	4.06	4.31	4.13
Responds constructively to employee ideas and concerns	3.95	4.07	3.99	4.04	4.15	4.12

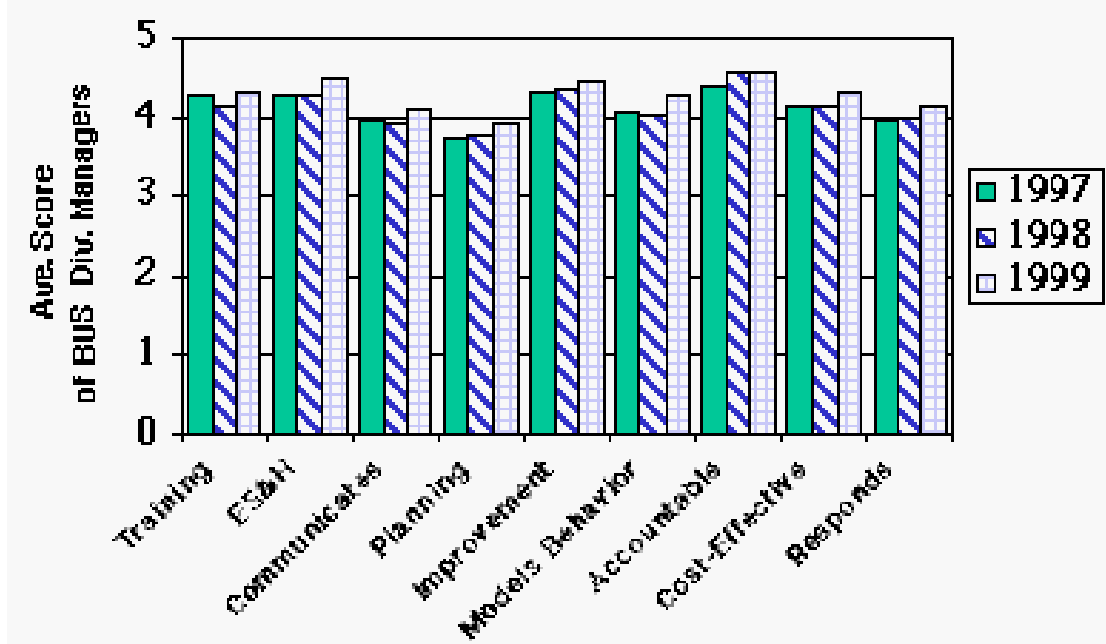


Figure 7-10. Three-year trends for average Upward Appraisal scores of BUS Division managers.

BUS senior leaders also monitor employee input into LANL's SCP to determine the type of safety concerns employees have and also to ensure issues are tracked to resolution. Of the seventy-seven issues raised by BUS employees and shown in Figure 7-11, only three still await resolution.

BUS Division closely monitors its injury/illness rate through several measures. Figure 7-12 shows the number of total recordable incidents and lost workday cases for the past year. As the figure shows, safety

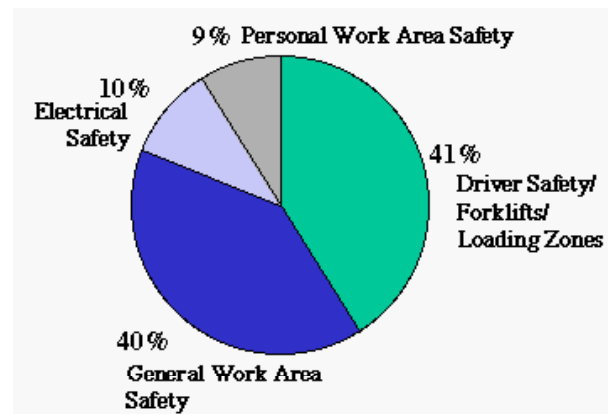


Figure 7-11. Safety Concern Program data for BUS Division in 1999.

problems have decreased during the past year. Figure 7-13 shows a rolling twelve-month average for TRI and LWC and compares BUS Division's performance to overall LANL performance. BUS Division numbers for TRI are slightly higher than overall LANL averages, while LWC are generally lower than LANL averages. Figure 7-14 shows the improving trend in LANL overall scores

related to employee safety and health. Finally, Figure 7-15 shows the effectiveness of management safety walkarounds within BUS Division. Senior leaders aim to accomplish 100% of the expected walkarounds, and for 1999 the totals were significantly higher than required.

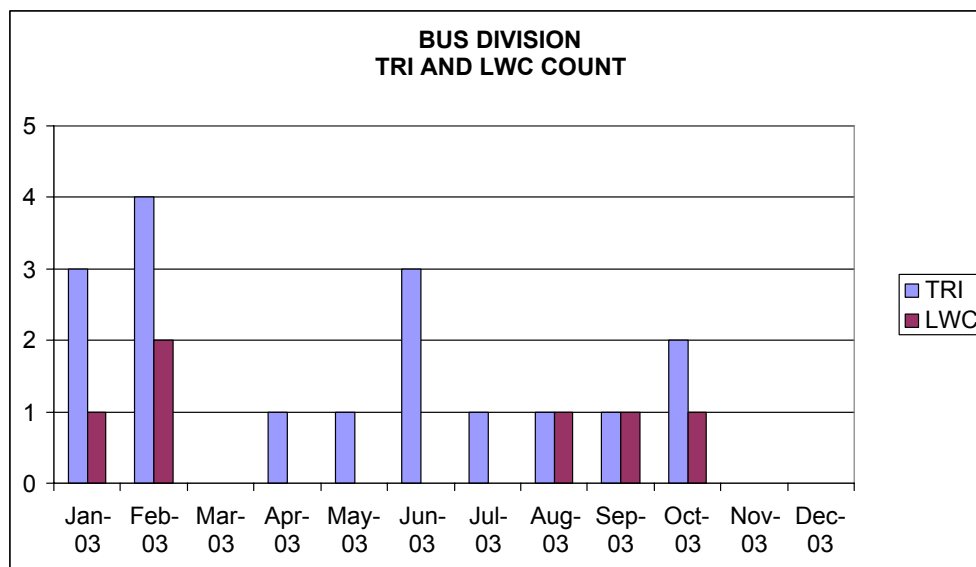


Figure 7-12. Total recordable incidents (TRI) and lost workday cases (LWC) for BUS Division for the past year.

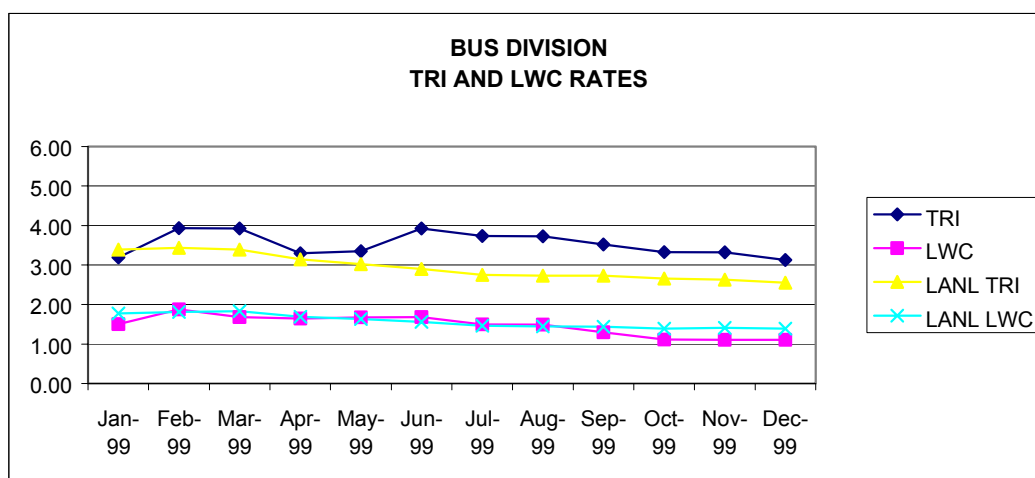


Figure 7-13. Twelve-month rolling average for employee injuries/illnesses.

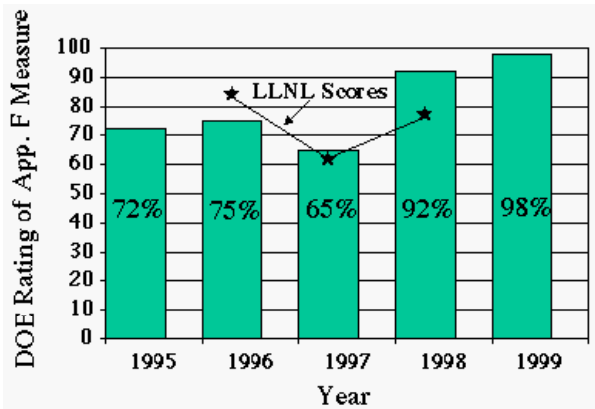


Figure 7-14. LANL overall Appendix F scores related to accident/injury prevention.

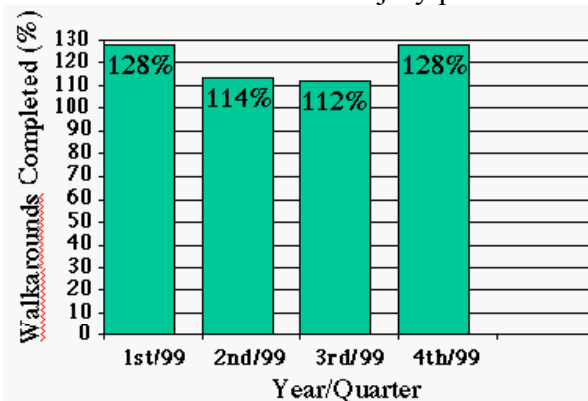


Figure 7-15. Percentage of required BUS Division walkarounds actually completed. Other measures that BUS Division monitors closely relate to operational effectiveness and continuous improvement. Appendix F measure 2.1 in the financial management focus area measures the division's ability to review and evaluate the quality of financial products and services provided. The three-year results (see Figure 7-16) show steadily high results, with performance equivalent to a rating of "excellent" from DOE. Two Appendix F measures in the functional area of procurement evaluate operational performance. Procurement measure 1.1 evaluates BUS Division's efforts to assess system operations (see Figure 7-17). Figure 7-18 shows the division's scores on procurement measure 1.2, measuring effectiveness and pursuing best practices. Results from both these measures show BUS Division performance consistently very high

and equal to or greater than that of key competitors.

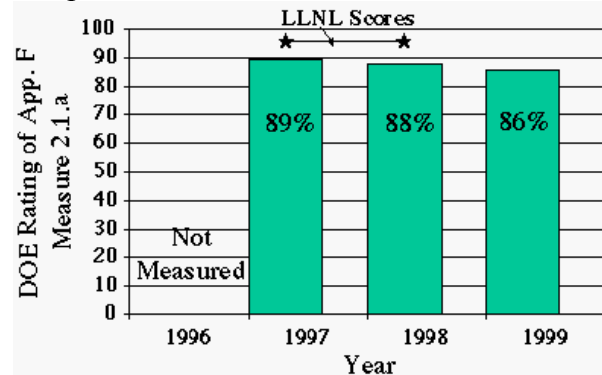


Figure 7-16. BUS Division's rating on Appendix F financial management measure 2.1, "Quality Products and Services."

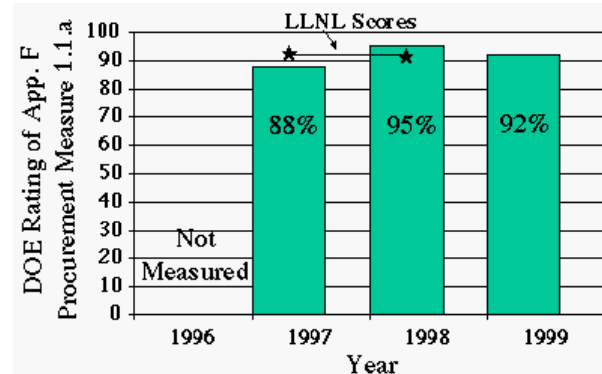


Figure 7-17. BUS Division's rating of Appendix F procurement measure 1.1, "Assessing System Operations."

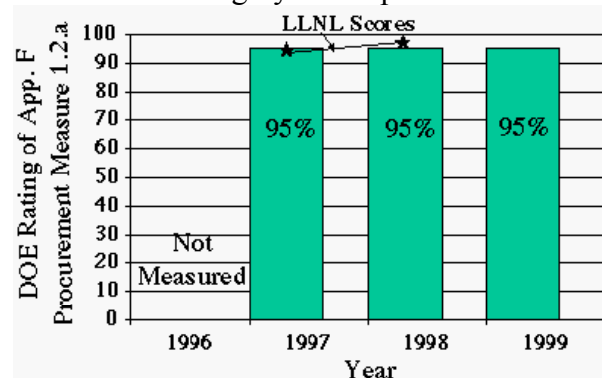


Figure 7-18. BUS Division's performance on Appendix F procurement measure 1.2,

"Measuring Effectiveness/Pursuing Best Practices."

7.2 Customer, Supplier, Employee and Other Results

BUS Division uses the Appendix F Process as a key way to identify customer requirements and to gather feedback regarding customer perception of division performance. Figure 7-19 shows overall LANL scores related to the functional area of financial management compared with scores from LLNL and LBNL. The LANL scores are a direct reflection of DOE's evaluation of BUS Division's performance and cover numerous separate measures in the functional area. The figure shows generally high scores equivalent to those of key competitors. (Scores for LLNL and LBNL for 1999 are not yet available.)

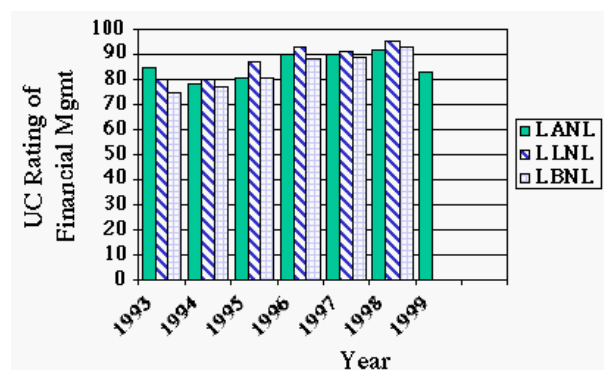


Figure 7-19. LANL Appendix F scores for the functional area of financial management.

Figure 7-20 shows LANL's scores for the Appendix F functional area of procurement. These scores show steadily improving performance and ratings that are slightly higher than those of key competitors. (Scores for LLNL and LBNL for 1999 are not yet available.)

LANL's Appendix F scores for property management are now on a par with best performance as compared with LBNL and LLNL scores for this functional area. Figure 7-21 shows LANL's tremendous improvement between 1993 and 1999. (Scores for LLNL and LBNL for 1999 are not yet available.)

Specific measures included within these three functional areas of Appendix F evaluate BUS Division's ability to solicit and analyze customer needs. Results in financial management (see Figure 7-22) show BUS Division's generally improving performance. A similar rating for the functional area of

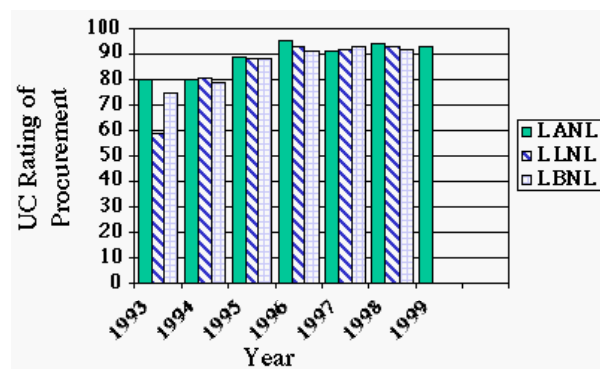


Figure 7-20. LANL Appendix F scores for the functional area of procurement.

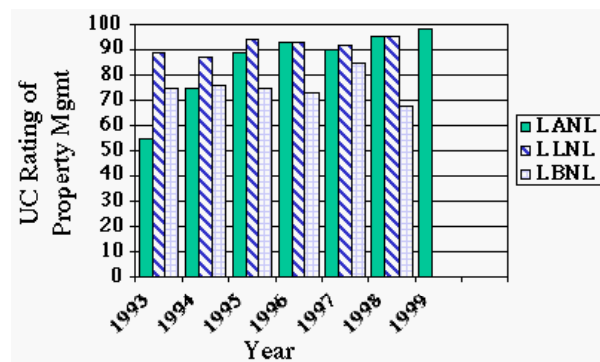


Figure 7-21. LANL Appendix F scores for the functional area of property management. procurement shows consistently high scores equal to or better than those from LLNL (see Figure 7-23). Appendix F measure 5.1 in the

functional area of property management evaluates how well BUS Division aligns its products and services with customer expectations. As Figure 7-24 shows, BUS Division's performance is exceptionally high.

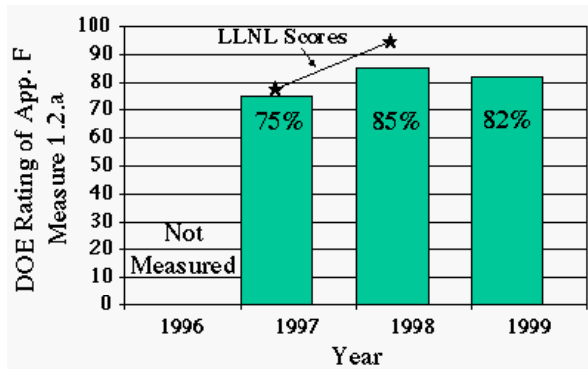


Figure 7-22. BUS Division's rating on Appendix F financial management measure 1.2, "Customer Satisfaction Results."

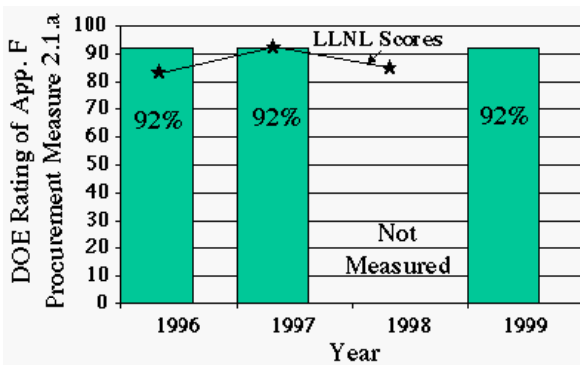


Figure 7-23. BUS Division's rating on Appendix F procurement measure 2.1, "Customer Satisfaction Rating."

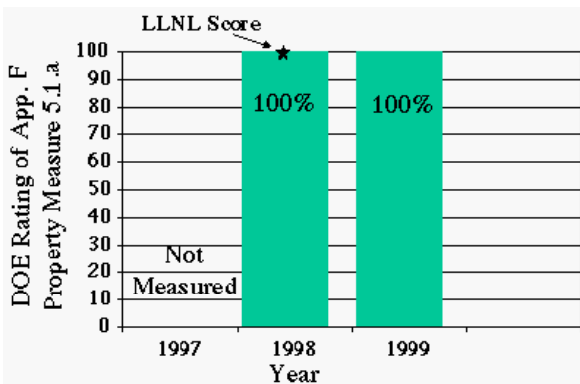


Figure 7-24. BUS Division's rating on Appendix F property management measure 5.1, "Alignment with Customer Expectations."

Other key customer results derive from specific measures within Appendix F. Figures 7-25 and 7-26 show overall LANL performance, to which BUS Division contributes, for recycling/pollution prevention and management safety walkarounds. Figures 7-6 and 7-14 in Item 7.1 presented overall LANL performance scores for utilities/energy conservation and injury/illness prevention, respectively.

Feedback from another key customer group, BUS Division employees, appears in Item 7.1 as ratings derived from the Checkpoint Survey and Upward Appraisal processes. Appendix F provides another measure for this customer segment. Procurement measure 3.1 (see Figure 7-27) specifically evaluates the division's ability to measure and improve the employee satisfaction rating. Evaluated for the first time in 1999, BUS Division's has

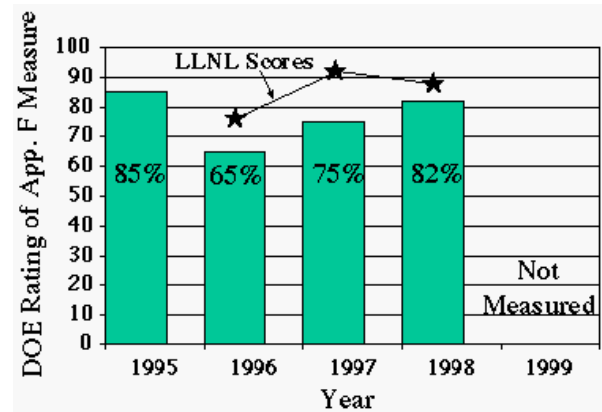


Figure 7-25. Overall LANL Appendix F performance related to recycling and pollution prevention.

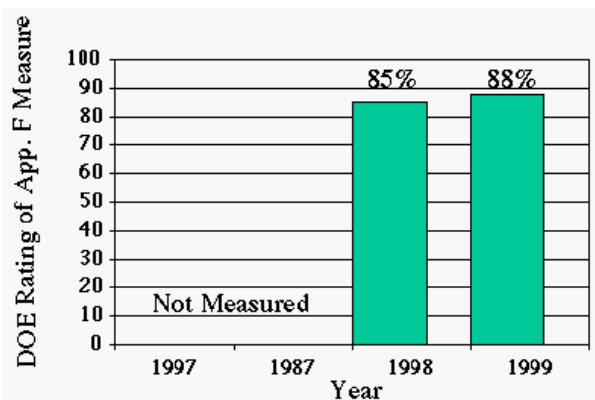


Figure 7-26. Overall LANL Appendix F performance related to management safety walkarounds.

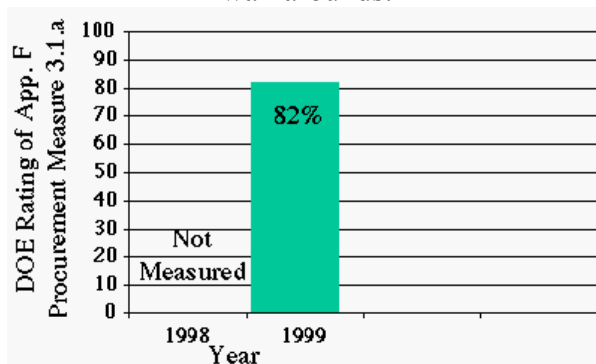


Figure 7-27. BUS Division's rating on Appendix F procurement measure 3.1, "Employee Satisfaction Rating."

established a relatively high initial score. BUS managers also monitor employee use of the division's electronic safety page, where summaries of LIRs affecting BUS operations are available. Figure 7-28 shows the number of users has increased significantly in the past several months.

A key responsibility of BUS Division procurement specialists is management of supplier performance. Appendix F procurement measure 1.3 (see Figure 7-29) evaluates the division's ability to effectively evaluate and manage suppliers.

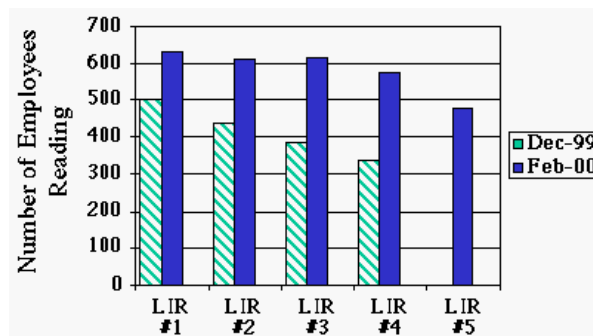


Figure 7-28. Number of BUS employees reading LIR summaries of the division electronic safety page.

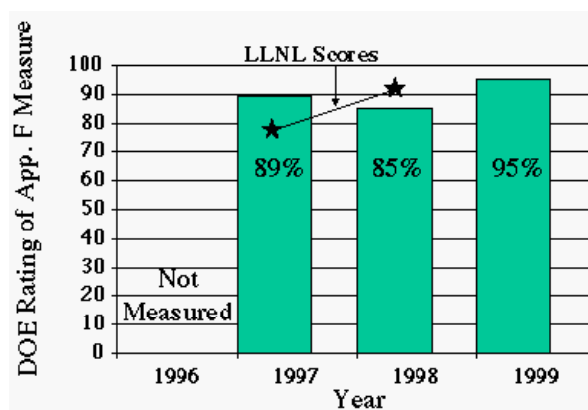


Figure 7-29. BUS Division performance related to Appendix F procurement measure 1.3, "Management of Supplier Performance."

Figure 7-30 shows trends in public perception of LANL's environmental performance. Information in this particular format is not available for 1999 because LANL changed the survey questionnaire temporarily. Information for this trend analysis resumed in February 2000, but those results are not yet available.

Another indicator of BUS Division's impact on Northern New Mexico is derived from Appendix F performance measure 1.4 in the functional area of procurement. This measure evaluates the division's ability to meet socioeconomic commitments in the local region. Figure 7-31 shows that BUS Division's performance for the past four years

has been exceptionally high and outpaces that of a key competitor.

A final key measurement that BUS Division senior leaders monitor to evaluate levels of environmental performance is the result of participation in the New Mexico Green Zia Environmental Excellence Awards Program. Because 2000 is the first year BUS Division has participated in this program, results from this initial assessment will become the baseline against which future performance will be judged.

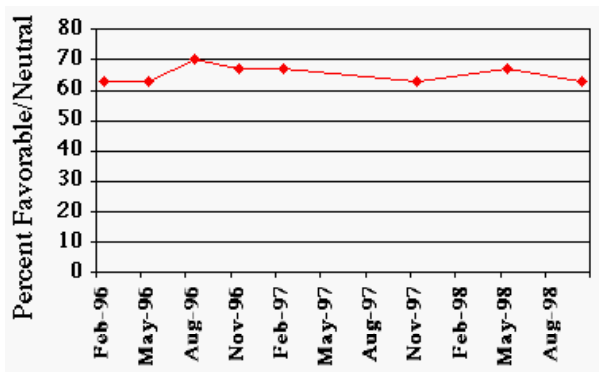


Figure 7-30. Percentage of NM residents who view LANL environmental performance as favorable or neutral.

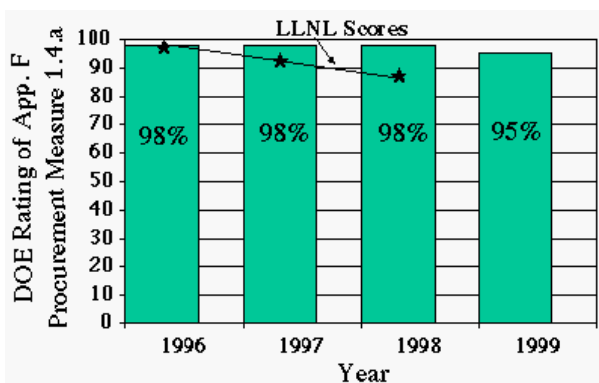


Figure 7-31. BUS Division's performance on Appendix F procurement measure 1.4.1, Meeting Socioeconomic Commitments.

7.3 Financial Results

BUS Division has identified four specific areas in which environmental performance drives financial results. Data related to current performance and trends are available for two of those areas. In the other two areas, BUS Division senior leaders are awaiting improvements in LANL infrastructure capabilities to identify specific measurement opportunities.

Figure 7-32 shows the cost savings in paper purchases BUS anticipates as a result of greater use of electronic documents and two-sided copying. This savings is expected to exceed \$30,000 in 2000, based on the 1998 baseline.

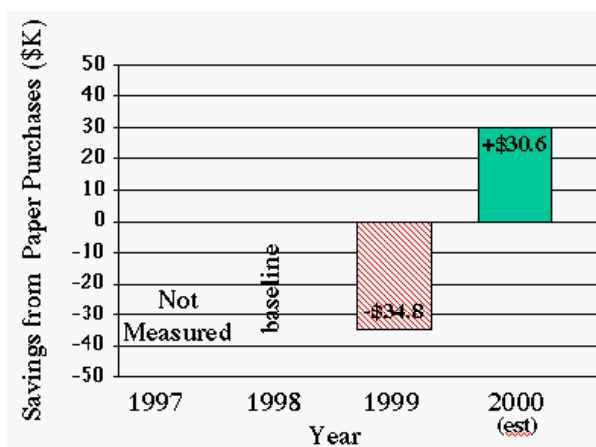


Figure 7-32. Cost savings in paper purchases due to pollution prevention activities.

BUS Division also avoids costs from its extremely low level of employee lost workdays. Using BUS Division's rolling twelve-month average and starting with the highest division average of approximately 2.0 in February 1999, the division has realized the savings shown in Figure 7-33 by cutting the LWC rate by nearly 50% over the past year.

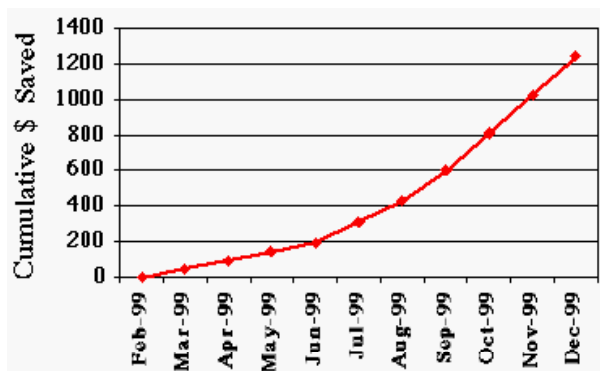


Figure 7-33. Cost savings due to reduction of employee lost workday cases.

In the future, as LANL develops an increased capability to track sanitary waste for individual work units, BUS Division expects to develop the capability to measure its cost savings from reduced creation of sanitary waste and also from income from sale of recycled materials. Future LANL infrastructure improvements may also make it possible for BUS Division to monitor, track, and improve its use of electrical energy and water.

Acronyms

CQI	Continuous Quality Improvement	PDCA	Plan-Do-Check-Act
CSM	Customer Satisfaction Management	QSO	Quality Support Office
DOE	Department of Energy	SBO	Small Business Office
DOT	Department of Transportation	SCP	Safety Concerns Program
EAP	Employee Assistance Program	TRI	Total Recordable Incidents
EPA	Environmental Protection Agency	UC	University of California
ESH	Environment, Safety and Health	VOC	Voice of the Customer
ESO	Environmental Stewardship Office	VOE	Voice of the Employee
HR	Human Resources		
ISM	Integrated Safety Management		
JIT	Just-In-Time		
LANL	Los Alamos National Laboratory		
LBNL	Lawrence Berkeley National Laboratory		
LIR	Laboratory Implementing Requirement		
LLNL	Lawrence Livermore National Laboratory		
LPR	Laboratory Performance Requirement		
LWC	Lost Workday Cases		
NRC	Nuclear Regulatory Commission		
OSHA	Occupational Safety and Health Administration		